THEATRE CATALOG

7th
ANNUAL
ALL NEW
EDITION

1948-49

Featuring:
THE WORKS OF JOHN AND DREW EBERSON, ARCHITECTS

THEATRE CATALOG

PAUL J. GREENHALGH,
Editorial Director

•

Published by

JAY EMANUEL
PUBLICATIONS, INC.

Publishing Offices: 1225 VINE STREET
PHILADELPHIA 7, PENNA., U.S.A.

Other Offices

Eastern Advertising Office
1600 Broadway, New York 19, N. Y.
Midwest Advertising Office
20 East Jackson Blvd., Chicago 4, Ill.
West Coast Advertising Office
923 Alandele Ave., Los Angeles 36, Cal.

JAY EMANUEL .....*Publisher*
HERBERT M. MILLER,
Editorial Consultant
NORMAN GENTIEU .....*Associate Editor*
NORMAN MORSE .....*Associate Editor*
LEWIS D. HERB.....*Field Representative*
ALBERT J. MARTIN..*Field Representative*
WILLIAM A. WRIGHT,
Field Representative
MAX CADES .....*Production Manager*
JAMES A. DALTON...*Advertising Manager*

1948-49

SEVENTH
ANNUAL
EDITION

Copyright 1949 by Jay Emanuel Publications, Inc., Philadelphia, Pa., U.S.A

All rights reserved. No portion of this book may
be reprinted without permission of the publishers

Printed in the U.S.A

Price: $3 a copy

(Foreign Shipments: $5 a copy)

EDITORIAL FOREWORD

It is with considerable pleasure that The Editors of THEATRE CATALOG present this all-new 7th ANNUAL EDITION.

Taking its place beside the already impressive set of six preceding, —and completely different,—annual volumes, their cross-referenced and cumulatively-indexed fund of physical theatre knowledge has never previously been approached.

It is also felt that this current edition is the most practical and the most day-in-and-day-out useful volume of the set.

But not these facts alone, or the several thousand advance orders which arrived before the publication date, causes the greatest pleasure, —and pride.

There is a different and more basic reason!

With the very first edition of 1940, the avowed basic purposes of THEATRE CATALOG were: (1) *To record the design and construction trends of each year,* and (2) *To forecast future developments that have physical theatre possibilities.* Over the first we have no control other than to track down and develop photographs and data as theatres are built both at home and abroad. But the second must reflect the judgment and knowledge of a "theatre-wise" staff.

In this current volume will be found many references, photographs, and even complete surveys, covering designs, materials, and products which are now widely accepted,—although they were relatively unknown to this industry when originally introduced in preceding volumes many years ago. Outstanding examples are: (1) the laminated wood arch introduced in the 1945 Edition and here pictured in five theatres built during the last year; (2) the prefabricated quonset arch which was first introduced in the 1945 Edition and is now widely accepted; and (3) the inner-serviced marquee which was thoroughly covered in the 1941 Edition and is now being promoted commercially. There are dozens more, but these few will prove the point.

This directly attributable fruit of research and theatre knowledge is reason for pleasure,—and pride!

This cannot be opportunism,—or "climbing aboard" when someone else furnishes the brains and sweat of the start.

This was the start! And for many years to come THEATRE CATALOG hopes to keep on "starting." And as it develops and "starts," encourages and introduces, its value to the theatre industry will continue to grow.

* * *

And a word about an outstanding new feature.

With this 7th ANNUAL EDITION, each succeeding volume will continue to single out for attention the history and works of some outstanding theatre design specialist. We are proud that the oldest and one of the most prominent architectural firms, JOHN AND DREW EBERSON of New York, inaugurates this policy. Others of equal prominence will follow with each annual edition. So that in permanently recording the industry's buildings, this most outstanding of all industry volumes will also build a permanent record of the men, and the "blood,—sweat,—and tears," that make them possible.

The record would not be complete without them!

1948-49

TABLE of CONTENTS

Editorial Surveys •

FRONTISPIECE I
EDITORIAL FOREWORD III
TABLE OF CONTENTS IV
AUTHORS AND CONTRIBUTORS VI
ADVERTISERS VII

BOOK ONE:
DESIGN AND CONSTRUCTION

The Works of John and Drew Eberson, Architects

JOHN EBERSON (A Biography) 2
DREW EBERSON (A Biography) 4
ALEXANDRE MERCIL (A Biography) 6
AN ABLE STAFF OF EXPERTS 7
AN AMERICAN CAVALCADE OF THEATRE ARCHITECTURE ..... *Norman Morse* 8
From Mrs. Sheehan's New Front Porch Through a World-Wide Career in Theatre and Institution Design
WORK UNDER WAY AT HOME AND ABROAD 20
The Continuing Progress of the Eberson Organization is Marked by Numerous Current Construction Projects
PLANS ALONE DO NOT CREATE A THEATRE 23
An Outline of the Necessary Highly Specialized Knowledge, Ability Experience and Diligence
EBERSON ACCOMPLISHMENTS, 1901 TO 1949 26
A Necessarily Limited Pictorial Review That is Representative of More Than 400 Theatres Designed

Design

AN INTERESTING CANADIAN THEATRE 34
Monument to the Memory of a Great Theatre Architect the ODEON-TORONTO is the Dominion's Finest
AN INTERESTING LATIN-AMERICAN THEATRE 43
Not Limited by High Domestic Costs the Lush TACNA is Notable for its Idea Value and Materials Used
THE NEVER-SWEPT THEATRE OF MEDIAPOLIS 47
Ingenious and Effective Cleaning Installation Simplifies Housekeeping and Freshens Atmosphere
PRACTICAL NOTES ON THEATRE WIRING 48
Fundamentals That Apply to the Usual Electrical Equipment and Lines for Power and Lighting
THE QUONSET ARCH HAS EARNED CONSIDERATION ... 50
Dozens Now Built and More Under Construction are Best Proof of Economy and Functional Adaptability
STUDIOS OF RADIO STATION WBAL, BALTIMORE 57
Theatre's Influence on Radio Architecture Emphasizes the Kinship between Industries
COMFORT AND SAFETY OF THE AUDIENCE
Harold Burris-Meyer and Edward C. Cole 61
An Interest Provoking Chapter from a New Book on the Derivation of Plan from an Analysis of Function

A REVIEW OF RECENT THEATRE CONSTRUCTION 65
THE REX and DUPLEX, Havana, Cuba
THE RICHFIELD, Richfield, Minn.
THE MANCUSO, Batavia, N. Y.
THE WOODS, Grosse Pointe Woods, Detroit, Mich.
THE SMYRNA, Smyrna, Del.
THE CORAL, Bradbury Heights, Md.
THE DIXIE, Miami, Fla.
THE FAIRVIEW, Fairview, Ohio
THE MILFORD, Milford, Del.
THE HELIX, La Mesa, Calif.
THE LANE, Columbus, Ohio
THE ODEON DANFORTH, Toronto, Canada
THE PARIS, New York, N. Y.
THE LAKE, Warsaw, Ind.
THE VOGUE, Pittsburgh, Calif.
THE MANOS, Monessen, Pa.
THE UTE, Rifle, Colorado
THE SHOALS, Florence, Ala.
THE ODEON, West Vancouver, Canada
THE STRAND, Erie, Pa.
THE VALLEY, El Paso, Texas
THE RITA, Vallejo, Calif.
THE ODEON, Victoria, Canada
THE OLD TRAIL, Columbus, Ohio
THE DOME, Libby, Mont.
THE ODEON-CHAMPLAIN, Montreal, Canada
THE BELLWOOD DRIVE-IN, Richmond, Va.
THE NILES OUTDOOR, Niles, Mich.
THE GRATIOT DRIVE-IN, Detroit, Mich.
THE BATTLE CREEK AUTO, Battle Creek, Mich.
THE VALLEY DRIVE-IN, Ontario, Calif.
THE FAMILY DRIVE-IN, New Kensington, Pa.
THE SAN PEDRO OUTDOOR, San Antonio, Texas
THE SUMMER DRIVE-IN, Memphis, Tenn.
LAMINATED WOOD ARCHES IN THEATRE CONSTRUCTION 137
Introduced Here in 1945, at Least Five Theatres Have Now Been Built With Glued Laminated Framing Members
ESSENTIALS OF LASTING, WATER-PROOF ROOFS
Charles S. Allen 146
Efficient Maintenance of Leak-Proof Roofs Held Economical with New Asbestos Coating

Construction and Materials

REMODELING THE THEATRE 154
The Economies and Advantages in Effectively Modernizing According to Accepted Practices
SPARKLING NEW THEATRES FROM DECREPIT OLD ONES 169
THE STATE, Nashua, N. H.
THE ASTOR, Boston, Mass.
THE CONISTON, Newport, N. H.
THE WAREHAM, Wareham, Mass.
THE STRAND, Hartford, Conn.
THE BEACON HILL, Boston, Mass.
THE CENTER, Pawtucket, R. I.
THE STRAND, Fall River, Mass.
THE MADISON, Madison, Conn.
THE STRAND, Thompsonville, Conn.
THE STRAND, Southbridge, Mass.
A STUDY IN LOW-COST QUONSET CONSTRUCTION.... 185
How One Operator Utilized Simplified Design and Materials to Reduce Building Expenses

Drive-In Theatres

DRIVE-IN THEATRES OF THE UNITED STATES 198
Latest Available Data on Location, Ownership, Car Capacity, and Operating Policy Disclosed by Survey
A NEW AMERICAN INSTITUTION 221
Drive-In Theatres Express the Freedom and the Functionalism of Our Times

A HOME IN A DRIVE-IN ..... *Bryce W. Anderson* 222
How the Petersons of Salt Lake City Built Their "Dream-House" Right in Their Theatre

RECOMMENDED SYSTEMS FOR CASH CONTROL *W. C. Stober* 227
An Analysis of the Admission, Collection, and Control Methods that Have Produced Speed and Efficiency

RECOMMENDED PRACTICES FOR SEASONAL CLOSING.. 231
Two Drive-In Showmen Survey the Methods and the Materials Found Practical from Actual Experience

A FENCE OF BILLBOARDS 236
Advertising Spaces Adapted to Drive-Ins Have Important Revenue Possibilities

INSECT CONTROL FOR DRIVE-IN THEATRES 237
A New Problem for Theatremen is Thoroughly Analyzed and the Latest Materials and Remedial Methods Listed

LAMINATED WOOD MASTS FOR SCREEN TOWERS 242
A Strong, Economical Material Offering Great Ease and Speed in Construction Where Low Budgets Rule

SURVEY OF ALL CURRENT IN-CAR SPEAKERS 243
A Resume of Statistical Data, Styling, Construction, Weatherproofing and Special Features Claimed by Each

UNDERGROUND CABLES FOR DRIVE-INS 249
A Hidden, but All-Important Part of the Drive-In Structure is Brought Above Ground for Analysis

TOPOGRAPHICAL SURVEYS AND TEST BORINGS 251
These First Steps in Careful Planning Can Save Thousands of Dollars and Future Drive-In Headaches

PLANNING THE DRIVE-IN .....*S. Herbert Taylor* 255
Considerations of Function and Equipment That Make Careful Engineering and Supervision Important

MAN MADE MOONLIGHT FOR DRIVE-INS 259
Area Lighting Without Distraction Adds Safety, Traffic Control, and Stimulates Confection Vending

A MODERN TOLL SYSTEM 263
Combining a Treadle, Electrical Counting Circuit, and Lighted Indicators for Cash Control

PREFABRICATED ALL-STEEL SCREEN TOWERS *Edward Lewin* 265
Sloped Design to Eliminate "Keystone" Picture is Added to Rugged Construction

BOOK TWO: EQUIPMENT

Front and Lobby

GLASS FOR CONSTRUCTION AND DECORATION 282
A Review of the Versatile Possibilities and Trouble-Free Functional Values of This Theatrical Material

THE NEW PATENTED INNER-SERVICE MARQUEE *Ben B. Poblocki* 290
A Specially Designed Room and New Light Source Provides Working Space, Storage and Efficiency

PLASTIC-FINISHED PANELING IN THEATRE DECOR *Simon A. Kinsey* 292
New Materials Provide Economical Means of Creating Attractive and Practical Interiors

Interior and Auditorium

BLACK LIGHTING MADE EASY .....*Ronald J. Elliott* 316
The Elementary Facts About Theatre Use and Introducing a New "Packaged" Mural with Theatre Possibilities

DESIGN AND COLOR BLENDING TRENDS 319
Leading Theatre Decorators Give Their Views on the Outstanding Decorative Developments in 1948

SPACE ACOUSTICS .....*James Y. Dunbar* 324
A General Discussion as Presented Before the Atlantic Coast Section, SMPE, in New York on February 19, 1947

SUGGESTIONS FOR BETTER THEATRE LIGHTING *Stanley McCandless* 327
Proper Lighting Enhances Patrons' Comfort While Providing an Attractive Atmosphere

THEATRE DIMMERS .....*Daniel M. Rollins* 330
Analysis of All Available Theatre Types and Their Recommended Installation and Maintenance Practices

SOURCES OF EMERGENCY AND STAND-BY ELECTRICITY 337
Strikes, Storms, and Shortages Point Up the Wisdom of Adequate Independent Lighting and Power Supply

FUNDAMENTALS OF CORRECT THEATRE SEATING *Felix W. Alexa* 342
The Relationship of Planned Sightlines to Spacing and Floor Slope that Insures Adequate Vision to Patrons

MODERN METHODS OF THEATRE CLEANING *Richard Webber* 346
A Review of the Advantages of Vacuum Cleaning and the Modern Equipment Available for the Purpose

Projection and Sound

LIGHT GENERATION BY THE HIGH-INTENSITY CARBON ARC .....*F. T. Bowditch* 390
Theoretical Considerations Assembled in the Course of Arc-Carbon Research and Development

HIGH-INTENSITY PROJECTION ARC LAMP *Charles A. Hahn* 393
Supply Source for the Great Amount of Distributed Light Needed at Larger Theatre and Drive-In Screens

NEW MOTIOGRAPH-HALL 75/115 HIGH INTENSITY LAMP 398
An Introductory Report that Promises Much from a New Basic Approach to Well Distributed Screen Brightness

RESULTS OF ELECTRONIC CONTROLLED ARC TESTS *J. K. Elderkin* 400
Additional Data on Actual Theatre Use of New Forest Lamp Indicates Good Light at Carbon and Power Saving

A NEW LINE OF PROJECTORS AND SOUND ....*J. R. Hoff* 402
Ballantyne 1948-49 Equipment for Theatre Sound and Projection Offers One More National Equipment Line

A NEW 35MM. PROJECTOR FOR THEATRE USE *R. H. Heacock* 405
Details of the Purpose, Engineering, and Operating Factors of the Recently Introduced "Brenkert #60"

A LIGHT DUTY AND PORTABLE 35MM. SOUND PROJECTOR 409
The Post-War Return of a Quality Product to Serve Small Theatres, School Auditoria or Industrial Uses

Heating, Ventilating and Air Conditioning

GLYCOL VAPOR: LATEST IN AIR PURIFICATION..... 436
Product and Application Information on Triethylene Glycol Which Promises Efficient and Simple Theatre Use

THE PROBLEM OF AIR DISTRIBUTION IN A THEATRE.. 438
A Round-table Discussion of a Specific Question on Heating and Cooling a Theatre by Forced Air

MAINTENANCE TIPS FOR USERS OF FREON-12 442
Five Series of Suggestion for Theatremen in Handling the Refrigerant and Cylinders

A DIFFERENT MORE EFFICIENT AIR DIFFUSER *T. A. Hughes* 444
Square or Rectangular to Conform to Interior Design Modern Diffusers Provide 100% Distribution Control

Miscellaneous Supplies, New Products and Supply Dealers

THEATRE SUPPLY DEALERS OF THE UNITED STATES.. 456
Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

FACTORS AFFECTING THE OPERATION OF BRUSHES... 472
Small in Size and Inexpensive, too Little Attention is Given Their Maintenance and Effect on Equipment

SUPPLY DEALERS OF THE DOMINION OF CANADA 473
Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

SUPPLY DEALERS OF THE REST OF THE WORLD 474
Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

BOOK THREE: MANAGEMENT

Advertising and Promotion

HOW ADVERTISING INTRODUCED A THEATRE 490
An Analysis of the Sound Psychological Background in the ODEON-TORONTO Campaign

"SELL" YOUR THEATRE, OR SELL YOUR THEATRE! *Montague Salmon* 494
Good Pictures Come and Go, But Alert Showmanship Provides the Equalizer in Institutional Exploitation

Recommended Practices and Maintenance

COSTS CONSISTENT WITH GOOD BUSINESS..*Jay Emanuel* 500
A Comparative Review of Theatre Finance Including Expenses, Profits and Valuations Based on Experience

CURRENTLY ALLOWED DEPRECIATION SCHEDULES.... 503
Treasury Department Attitude on High Salvage Values Requires Readjustment of Accounting by Most Theatres

SANITARY MAINTENANCE HAS BOXOFFICE IMPORTANCE 506
Recommended Cleaning and Disinfecting Practices That Will Guarantee Clean Theatre Washrooms

Extra Profits

THEATRE PROBLEMS IN CONFECTION VENDING..... 516
A Survey of Conditions as They Exist in 1949, and of the Possibilities for Development in the Future

AN INDEPENDENT CIRCUIT'S EXTRA PROFITS SET-UP.. 519
The Management Methods and Systems Which the Large Walter Reade Circuit Found Necessary to a Big Job

Television and 16mm. Film

LARGE SCREEN TELEVISION .....*Ralph V. Little, Jr.* 528
An Analysis of the Advantages and Disadvantages of the Existing Methods With Theatre Application

TELEVISION—OLD WINE IN A NEW BOTTLE ..*E. S. Huber* 532
A Practical Theatre Man Discusses the Probable Role of Television in Motion Picture Houses

EMERGENCY USE OF 16MM. AS STANDBY 534
Results of a Field Test of Sub-Standard Equipment Under Normal Theatre Operating Use Before Audiences

Authors and Contributors •

A

AGREE, A. ARNOLD 76
Charles N. Agree, Inc., Architects
ALEXA, FELIX W. 342
Kroehler Manufacturing Company
ALLEN, CHARLES S. 146
Manufacturer's Representative
ANDERSON, BRYCE W. 222
ANDERSON, J. H. 137
Alfred Colle Co.
ANGELO, EMEDIO 258
Artist, Chicago-Sun Times Syndicate
ASSOCIATED THEATRES, INC. 86

B

BAHR, HOWARD E. 282
Corning Glass Works
BARKER, GRAY 134
Lovett Co.
BEACH, C. E. 53
Ritz Theatre, Fernandina, Fla.
BEATTY, ROBERT F. 134
Architect
BERNSTEIN, ALBERT 231
Bellwood Drive-In, Bellwood, Va.
BLACKMON, HENDLEY 337
Electrical World
BLUMENHEIN, LEROY 519
Walter Reade's Theatres, Inc.
BOUDOURIS, M. A. 98, 130
Theatre Equipment Company
BOUNSALL, WILLIAM 34
Artist
BOWDITCH, F. T. 390
National Carbon Company, Inc.
BURNAM, C. M., JR. 438
Heating, Piping, and Air Conditioning
BURRIS-MEYER, HAROLD 61
Stevens Institute of Technology

C

CANTIN, ALEXANDER A. 100
Cantin and Cantin, Architects
CARDEA, ARMAND 43
Paramount International Films, Inc.
CLARK, ERNEST W. 56
Molalla Theatre, Molalla, Ore.
COCHRAN, ALEXANDER M. 237
Fogging and Dusting Service, Inc.
COLE, EDWARD C. 61
Yale University
COLLIS, SAMUEL 534
Telephoto Industries Ltd.
CONBOY, JERRY 336
CROWLEY, R. JEROME 319
Continental Theatre Studios
CRYSTAL, CLEMENT S. 43
Paramount International Theatres Corporation

D

DE ANGELIS, M. J. 72
Architect
DEXTER, RAY, JR. 143
Harden Theatre, Callicoon, N. Y.
DINGEE, A. N. 337
Electric Storage Battery Company
DUNBAR, JAMES Y. 324
Johns-Manville Corporation

E

EBERSON, DREW 4, 20
John and Drew Eberson, Architects
EBERSON, JOHN 2, 23
John and Drew Eberson, Architects
EBERSON, JOHN AND DREW 82, 88
Architects
ELDERKIN, J. K. 400
Forest Electronic Co., Inc.
ELLIOTT, RONALD J. 316
Switzer Brothers, Inc.
EMANUEL, JAY 500
Theatre Circuit Owner and Publisher
ENGLISH, JAY I., M.R.A.I.C. 34
Architect

F

FLATOW, WILLIAM, JR. 506
West Disinfecting Company
FLOERSHEIMER, AL 519
Walter Reade's Theatres, Inc.
FOX AND FOX 86
Architects
FREDERICK, ERWIN G. 98
Architect

G

GEALER, MAX 128
Associated Theatres, Inc.
GEOGHEGAN, C. W. 56
Star Theatre, South Hill, Va.
GLESNE, I. R. 47
Swan Theatre, Mediapolis, Iowa
GOSSAGE, E. L. 319
Great Western Stage Equipment Company

H

HAHN, CHARLES A. 393
J. E. McAuley Manufacturing Company
HAHN, JEROME G. 506
Alfred J. Silberstein, Bert Goldsmith, Inc.
HARRISON, ROLAND TIP 47
Wetherell & Harrison, Architects
HEACOCK, R. H. 405
RCA Victor Division, Radio Corporation of America
HEFFERAN, ALBERT 185
Crown Theatre, Marne, Mich.
HIBBERT, WILFRID 282
Libbey-Owens-Ford Glass Company
HIRSCHOFF, EDWIN C. 337
D. W. Onan & Sons, Inc.
HOFF, J. R. 402
The Ballantyne Company
HORNSTEIN, HAL 84
Joe Hornstein, Inc.
HUBER, E. S. 532
Fourth Avenue Amusement Company
HUGHES, T. A. 444
Air Devices, Inc.

J

JONES, BURTON 90
Bleecker and Jones

K

KELLEY, JOSEPH W. 436
Air Purification Service, Inc.
KEMP, LESLIE H., A.R.I.B.A. 34
Architect
KESSLER, A. I. 319
Novelty Scenic Studios
KINSEY, SIMON A. 299
Marsh Wall Products, Inc.
KRAMER, HOWARD W. 282
Cunard White Star, Ltd.
KUGEL, E. W. 54
State Theatre, Holstein, Iowa

L

LAURIE, ARCHIE J. 34, 490
The Odeon Theatres (Canada) Ltd.
LEE, S. CHARLES 90
Architect
LEWIN, EDWARD 265
Elizabeth Iron Works, Inc.
LITTLE, RALPH V., JR. 528
Radio Corporation of America
LONG, L. A. 237
Agricultural Chemicals

M

MAHARAM, JOSEPH 319
Maharam Fabric Corporation
MARVIN, JOHN 337
D. W. Onan & Sons, Inc.
MATTHEWS, FRED C. 251, 398
Motiograph, Inc.
MAYER, ARTHUR 138
Capitola Theatre, Capitola, Calif.
MCCANDLESS, STANLEY 327
Yale University
MCKENNA, H. W. 436
Carbide & Carbon Chemicals Corporation
MERCIL, ALEXANDRE 6
John and Drew Eberson, Architects
MEYER, A. E. 409
International Projector Corporation

MOLESWORTH, SECORD AND SAVAGE 51
Architects
MONSON, DONALD J. 104
Architect
MORSE, NORMAN 8
MURNO, JAMES J. 96
Architect

N

NEILS, JEAN K. (MRS.) 120
Dome Theatre, Libby, Montana
NELSON, F. W. 337
Kohler Company
NOTT AND MERRILL 34
Photographers

O

OLLINGER, C. G. 472
National Carbon Company, Inc.

P

PEACOCK AND BOLONGIA 54
Architects
PETERSON, ERICK C. 222
Motor-Vu Theatre, Salt Lake City, Utah
POBLOCKI, BEN. B. 290
Poblocki & Sons

R

RAINEY, VINCENT G. 114
Architect
RAMBUSCH, HAROLD W. 319
Rambusch Decorating Company
RIGAUMONT, VICTOR A. 102, 110
Architect
RISEMAN, WILLIAM 169
William Riseman Associates, Designers
ROLLINS, DANIEL M. 330
Ward Leonard Electric Co.
ROSENBAUM, STANLEY 106
Shoals Theatre, Florence, Alabama

S

SALMON, MONTAGUE 494
Rivoli Theatre, New York
SAVAGE, W. J. 337
Thomas A. Edison, Inc.
SCARLOTT, CHARLES A. 337
Westinghouse Electric Corporation
SCHALLER, JOHN A. 137, 242
Rilco Laminated Products, Inc.
SCRANTON, W. F. 534
Ampro Corporation
SEIDMAN, B. 319
Paramount Decorating Co., Inc.
SMITH, V. C. 259
Park-In Theatres, Inc.
SORENSON, H. S. 112, 135
Modern Theatre Equipment Company
STOBER, W. C. 227
General Register Corporation
SVENSON, A. F. R. 69
Richfield Theatre, Richfield, Minn.

T

TAYLOR, HERBERT S. 255
Park-In Theatres, Inc.
TONKS, HARVEY S. 259
Union Metal Manufacturing Company

V

VAN LLOYD, JACK 231
Park-In Theatres, Inc.
VIVES & CO., S. L. 65
Rex and Duplex Theatres, Havana, Cuba

W

WALLER, TOM 198
Motion Picture Association of America
WEBBER, RICHARD 346
The Spencer Turbine Co.
WHITE, MORTIMER C., JR. 237
The Mitchell-White Corp.
WILSON, KEMMONS 136
Summer Drive-In, Memphis, Tenn.
WITTING, GEORGE 259
General Electric Company

Y and Z

YASSENOFF, LEO 92, 118
F & Y Building Service
ZINK, JOHN J. 79
Zink & Moeble, Architects

Advertisers •

A

ABBOTT THEATRE EQUIPMENT CO. 459
ADAM, FRANK, ELECTRIC CO. 364
ADLER SILHOUETTE LETTER CO. 302, 303
AIRTEMP DIV., CHRYSLER CORP. 451
ALBANY THEATRE SUPPLY CO. 463
ALEXANDER, HARRY, INC. 196
ALEXANDER SMITH AND SONS CARPET CO. 380, 381
ALEXANDER THEATRE SUPPLY CO. 468
ALTEC SERVICE CORP. 510
AMERICAN-OLEAN TILE CO. 192
AMERICAN MAT CORP. 310
AMERICAN SEATING CO. 374
AMPRO CORP., THE 535
AMUSEMENT INDUSTRIES CO. 488
AMUSEMENT SUPPLY CO., ... 464
ASHCRAFT, C. S. MANUFACTURING CORP. 420
ASSOCIATED INDUSTRIES CO. 469
ATLAS THEATRE SUPPLY CO. 468
AUTOMATIC DEVICES CO. 488

B

BAKER ICE MACHINE CO., INC. 450
BALDOR ELECTRIC CO. 426
BALLANTYNE CO., THE 276
BAUSCH AND LOMB OPTICAL CO. 432
BECKER THEATRE SUPPLY CO. 463
BERLO VENDING CO. 523
BICKFORD BROTHERS CO. 464
BLUMBERG BROTHERS, INC. 468
BRADY MOVIE SERVICE 456
BRIENT, ELMER H. AND SONS THEATRE EQUIPMENT 458
BRODSKY, DAVID E., ASSOCIATES 350

C

CAPITOL THEATRE SUPPLY CO. 460
CENTRAL N. Y. THEATRE SUPPLY CO. 465
CENTURY LIGHTING, INC. 368, 369
CENTURY PROJECTOR CORP. 414, 415
CHRYSLER CORP. (AIRTEMP DIV.) 451
CIFRE, JOE, INC. 461
CLANCY, J. R., INC. 358
CONTINENTAL THEATRE STUDIOS 150
CRETORS, C. AND COMPANY 524

D

DAYTON FILM, INC., THE 466
DAYTON SAFETY LADDER CO. 487
DAZIAN'S, INC. 355
DEVRY CORP. 416
DICTOGRAPH PRODUCTS CO., INC. 387
DIXIE THEATRE SERVICE AND SUPPLY CO. 458
DOMINION SOUND EQUIPMENTS, LTD. 474
DRIVE-IN THEATRE EQUIPMENT CO., INC. 277

E

ELECTRIC-AIRE ENGINEERING CORP. 386
EMANUEL, JAY, PUBLICATIONS, INC. 388, 454
ESSANNAY ELECTRIC MANUFACTURING CO. 434

Evansville Theatre Supply Co. 459
Exhibitor, The 454

F

F and Y Building Service, The 151
Falls City Theatre Equipment Co. 460
Federal Electric Products Co., (William Wurdack Electric Div.) 365
Fence Company of America 280
Filbert, John P., Co. 457
Flexlume Sign Corp. 301
Forbes, "Ernie", Theatre Supply 461
Forest Electronic Co., Inc. 421
Forest Manufacturing Corp. 427
Formica Insulation Co., The 189
Frank Adam Electric Co. 364
Frankel Associates, Inc. 356
Fremont Rubber Co. 311

G

General Electric Co., (Lamp Div.) 483
General Register Corp. 313
General Theatre Supply Co., Ltd. 473
Goldberg Brothers 486
Golde Manufacturing Co. 485
Great Lakes Steel Corp., (Stran-Steel Div.) 195
Great Western Stage Equipment Co., Inc. 359
Greiwe, Inc. 351

H

Hadden Theatre Supply 460
Hardin Theatre Supply Co. 469
Harry Alexander, Inc. 196
Hertner Electric Co., The 428
Hewitt-Robins, Inc., (Hewitt Rubber Div.) 373
Heywood-Wakefield Co., (Theatre Seating Div.) 375
Hornstein, Joe, Inc., (Miami) 458
Hornstein, Joe, Inc., (New York) 464

I

I. A. T. S. E. 514
Ideal Seating Co. 376
International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators of the United States and Canada 514
International Projector Corp. 417

J

Johnson Fare Box Co. 314

K

Karagheusian, A. and M., Inc. 382
Kneisley Electric Co., The 429
Knoxville Scenic Studios 352
Kollmorgen Optical Corp. 433
Kroehler Manufacturing Co. 377

L

Leedom, Thomas L., Co. 383
Lovett and Co. 471

M

Maharam Fabric Corp. 357
Manhardt, Vic, Co., Inc. 471
Manley, Inc. 525
Marsh Wall Products, Inc. 190
McAuley, J. E., Manufacturing Co. 422
McCarthy Theatre Supply, (Billings) 462
McCarthy Theatre Supply, (Fargo) 466
Midstate Theatre Supply 456
Mid-West Theatre Supply Co., Inc., (Indianapolis) 460
Mid-West Theatre Supply Co., Inc., (Cincinnati) 466
Minneapolis Theatre Supply Co. 462
Modern Theatre Equipment Co. 469
Modern Theatre Supply, Inc. 470
Mohawk Carpet Mills, Inc. 378, 379
Monarch Theatre Supply, Inc. 468
Motiograph, Inc. 278, 412, 413, 419

N

National Carbon Co., Inc. 411
National Screen Service Corp. 498
National Super Service Co., Inc. 384
National Theatre Supply 274, 275, 446, 447, 526
National Theatre Supply Export 477
Novelty Scenic Studios, Inc. 348, 349

O

Oklahoma Theatre Supply Co. 467
Oliver Theatre Supply Co., Inc. 466
Onan, D. W. and Sons, Inc. 372
Owens-Corning Fiberglas Corp. 360

P

Paramount Decorating Co. 353
Park-In Theatres, Inc. 268
Perdue Cinema Service 470
Perey Turnstile Co., The 309
Perfo Mat and Rubber Co. 312
Phillips, Lou, Theatre Supplies, Inc. 457
Poblocki and Sons 304, 305

Q

Quality Theatre Supply Co., Inc. 463
Queen Feature Service, Inc., The 456

R

Radio Corp. of America, (RCA International Div.) 479
Radio Corp. of America, (RCA Victor Div.) .. 269, 270, 271, 272
RCA Service Co., Inc. 511
Rau Studios, Inc. 354
Reliance Art Metal Co., The 308
Reversible Collar Co. 512
Rilco Laminated Products Co. 194
Robin, J. E., Inc. 424, 425

S

S.O.S. Cinema Supply Corp. 464
St. Louis Theatre Supply Co. 462
Shapiro, M. and Sons, Construction Co., Inc. 152
Sheldon Theatre Supply 467
Smith, Alexander and Sons Carpet Co. 380, 381
Southeastern Theatre Equipment Co., (Atlanta) 459
Southeastern Theatre Equipment Co., (Charlotte) 465
Southeastern Theatre Equipment Co., (Jacksonville) 458
Southwestern Theatre Equipment Co., (Houston) 470
Spencer Turbine Co., The 385
Standard Art, Marble and Tile Co., Inc. 193
Standard Theatre Supply Co. 465
Stebbins Theatre Equipment Co. 462
Stran-Steel Div. Great Lakes Steel Corp. 195
Strong Electric Corp., The 273, 423
Sturtevant Div., Westinghouse Electric Corp. 448, 449
Superior Electric Co., The 362, 363

T

Tate, Vincent M. 467
The Exhibitor 454
Theatre Catalog (Back Issues) 388
Theatre Equipment Co. 279
Theatre Specialties, Inc. 306
Theatre Supply Co. 456
Tile-Tex Co., Inc., The 191
Tri-State Theatre Supply 469
Trumbull Electric Manufacturing Co. 366
Typhoon Air Conditioning Co., Inc. 452

U

United States Air Conditioning Corp. 453
Universal Corp. 307

V

Vallen, Inc. 361
Vocalite Screen Corp. 430
Voigt Co. 370, 371

W

Wagner Sign Service, Inc. 293, 294, 295, 296, 297, 298
Walker-American Corp. 431
Ward Leonard Electric Co. 367
Wenzel Projector Co. 418
West Disinfecting Co. 513
Western Service and Supply 457
Western Sound and Equipment Co. 470
Western Theatre Equipment Co., Inc. 467
Western Theatrical Equipment Co. 457
Western Theatre Supply Co., The 463
Westinghouse Electric Corp., (Lamp Div.) 484
Westinghouse Electric Corp., (Sturtevant Div.) 448, 449
Westrex Corp. 481
Wilkin Theatre Supply, Inc., (Atlanta) 459
Wilkin Theatre Supply, Inc., (Charlotte) 465
William Wurdack Div. Federal Electric Products Co. 365

The Works of John and Drew Eberson, Architects

JOHN EBERSON (A Biography) 2

DREW EBERSON (A Biography) 4

ALEXANDRE MERCIL (A Biography) 6

AN ABLE STAFF OF EXPERTS 7

AN AMERICAN CAVALCADE OF THEATRE ARCHITECTURE ..... *Norman Morse* 8
From Mrs. Sheehan's New Front Porch Through a World-Wide Career in Theatre and Institution Design

WORK UNDER WAY AT HOME AND ABROAD 20
The Continuing Progress of the Eberson Organization is Marked by Numerous Current Construction Projects

PLANS ALONE DO NOT CREATE A THEATRE 23
An Outline of the Necessary Highly Specialized Knowledge, Ability Experience and Diligence

EBERSON ACCOMPLISHMENTS, 1901 TO 1949 26
A Necessarily Limited Pictorial Review That is Representative of More Than 400 Theatres Designed

Design

AN INTERESTING CANADIAN THEATRE 34
Monument to the Memory of a Great Theatre Architect the ODEON-TORONTO is the Dominion's Finest

AN INTERESTING LATIN-AMERICAN THEATRE 43
Not Limited by High Domestic Costs the Lush TACNA is Notable for Its Idea Value and Materials Used

THE NEVER-SWEPT THEATRE OF MEDIAPOLIS 47
Ingenious and Effective Cleaning Installation Simplifies Housekeeping and Freshens Atmosphere

PRACTICAL NOTES ON THEATRE WIRING 48
Fundamentals That Apply to the Usual Electrical Equipment and Lines for Power and Lighting

THE QUONSET ARCH HAS EARNED CONSIDERATION 50
Dozens Now Built and More Under Construction are Best Proof of Economy and Functional Adaptability

STUDIOS OF RADIO STATION WBAL, BALTIMORE 57
Theatre's Influence on Radio Architecture Emphasizes the Kinship between Industries

COMFORT AND SAFETY OF THE AUDIENCE
Harold Burris-Meyer and Edward C. Cole 61
An Interest Provoking Chapter from a New Book on the Derivation of Plan from an Analysis of Function

A REVIEW OF RECENT THEATRE CONSTRUCTION 65
THE REX and DUPLEX, Havana, Cuba
THE RICHFIELD, Richfield, Minn.
THE MANCUSO, Batavia, N. Y.
THE WOODS, Grosse Pointe Woods, Detroit, Mich.
THE SMYRNA, Smyrna, Del.
THE CORAL, Bradbury Heights, Md.
THE DIXIE, Miami, Fla.
THE FAIRVIEW, Fairview, Ohio
THE MILFORD, Milford, Del.
THE HELIX, La Mesa, Calif.
THE LANE, Columbus, Ohio
THE ODEON DANFORTH, Toronto, Canada
THE PARIS, New York, N. Y.
THE LAKE, Warsaw, Ind.
THE VOGUE, Pittsburgh, Calif.
THE MANOS, Monessen, Pa.
THE UTE, Rifle, Colorado
THE SHOALS, Florence, Ala
THE ODEON, West Vancouver, Canada
THE STRAND, Erie, Pa.
THE VALLEY, El Paso, Texas
THE RITA, Vallejo, Calif.
THE ODEON, Victoria, Canada
THE OLD TRAIL, Columbus, Ohio
THE DOME, Libby, Mont.
THE ODEON-CHAMPLAIN, Montreal, Canada
THE BELLWOOD DRIVE-IN, Richmond, Va.
THE NILES OUTDOOR, Niles, Mich.
THE GRATIOT DRIVE-IN, Detroit, Mich.
THE BATTLE CREEK AUTO, Battle Creek, Mich.
THE VALLEY DRIVE-IN, Ontario, Calif.
THE FAMILY DRIVE-IN, New Kensington, Pa.
THE SAN PEDRO OUTDOOR, San Antonio, Texas
THE SUMMER DRIVE-IN, Memphis, Tenn.

LAMINATED WOOD ARCHES IN THEATRE CONSTRUCTION 137
Introduced Here in 1945, at Least Five Theatres Have Now Been Built With Glued Laminated Framing Members

ESSENTIALS OF LASTING, WATER-PROOF ROOFS
Charles S. Allen 146
Efficient Maintenance of Leak-Proof Roofs Held Economical with New Asbestos Coating

Construction and Materials

REMODELING THE THEATRE 154
The Economies and Advantages in Effectively Modernizing According to Accepted Practices

SPARKLING NEW THEATRES FROM DECREPIT OLD ONES 169
THE STATE, Nashua, N. H.
THE ASTOR, Boston, Mass.
THE CONISTON, Newport, N. H.
THE WAREHAM, Wareham, Mass.
THE STRAND, Hartford, Conn.
THE BEACON HILL, Boston, Mass.
THE CENTER, Pawtucket, R. I.
THE STRAND, Fall River, Mass.
THE MADISON, Madison, Conn.
THE STRAND, Thompsonville, Conn.
THE STRAND, Southbridge, Mass.

BOOK ONE:
Design and Construction

A STUDY IN LOW-COST QUONSET CONSTRUCTION.... 185
How One Operator Utilized Simplified Design and Materials to Reduce Building Expenses

Drive-In Theatres

DRIVE-IN THEATRES OF THE UNITED STATES 198
Latest Available Data on Location, Ownership, Car Capacity, and Operating Policy Disclosed by Survey

A NEW AMERICAN INSTITUTION 221
Drive-In Theatres Express the Freedom and the Functionalism of Our Times

A HOME IN A DRIVE-IN .....*Bryce W. Anderson* 222
How the Petersons of Salt Lake City Built Their "Dream-House" Right in Their Theatre

RECOMMENDED SYSTEMS FOR CASH CONTROL
W. C. Stober 227
An Analysis of the Admission, Collection, and Control Methods that Have Produced Speed and Efficiency

RECOMMENDED PRACTICES FOR SEASONAL CLOSING.. 231
Two Drive-In Showmen Survey the Methods and the Materials Found Practical from Actual Experience

A FENCE OF BILLBOARDS 236
Advertising Spaces Adapted to Drive-Ins Have Important Revenue Possibilities

INSECT CONTROL FOR DRIVE-IN THEATRES 237
A New Problem for Theatremen is Thoroughly Analysed and the Latest Materials and Remedial Methods Listed

LAMINATED WOOD MASTS FOR SCREEN TOWERS 242
A Strong, Economical Material Offering Great Ease and Speed in Construction Where Low Budgets Rule

SURVEY OF ALL CURRENT IN-CAR SPEAKERS 243
A Resume of Statistical Data, Styling, Construction, Weatherproofing and Special Features Claimed by Each

UNDERGROUND CABLES FOR DRIVE-INS 249
A Hidden, but All-Important Part of the Drive-In Structure is Brought Above Ground for Analysis

TOPOGRAPHICAL SURVEYS AND TEST BORINGS 251
These First Steps in Careful Planning Can Save Thousands of Dollars and Future Drive-In Headaches

PLANNING THE DRIVE-IN .....*S. Herbert Taylor* 255
Considerations of Function and Equipment That Make Careful Engineering and Supervision Important

MAN MADE MOONLIGHT FOR DRIVE-INS 259
Area Lighting Without Distraction Adds Safety, Traffic Control, and Stimulates Confection Vending

A MODERN TOLL SYSTEM 263
Combining a Treadle, Electrical Counting Circuit, and Lighted Indicators for Cash Control

PREFABRICATED ALL-STEEL SCREEN TOWERS
Edward Lewin 265
Sloped Design to Eliminate "Keystone" Picture is Added to Rugged Construction

Advertising:

ALEXANDER, HARRY, INC. 196
AMERICAN-OLEAN TILE CO. 192
BALLANTYNE CO., THE 276
CONTINENTAL THEATRE STUDIOS 150
DRIVE-IN THEATRE EQUIPMENT CO., INC. 277
F AND Y BUILDING SERVICE, THE 151
FENCE COMPANY OF AMERICA 280
FORMICA INSULATION CO., THE 189
GREAT LAKES STEEL CORP., (STRAN-STEEL DIV.) 195
MARSH WALL PRODUCTS, INC. 190
MOTIOGRAPH, INC. 278
NATIONAL THEATRE SUPPLY 274, 275
PARK-IN THEATRES, INC. 268
RADIO CORP. OF AMERICA, (RCA VICTOR DIV.) .. 269, 270, 271, 272
RILCO LAMINATED PRODUCTS CO. 194
SHAPIRO, M. AND SONS, CONSTRUCTION CO., INC. 152
STANDARD ART, MARBLE AND TILE CO., INC. 193
STRONG ELECTRIC CORP., THE 273
THEATRE EQUIPMENT CO. 279

The Works of
JOHN and DREW EBERSON
Architects

1948-49



John Eberson

From an inconspicuous beginning in a small Austrian village to the dean of American theatre architects may seem like a tale from the annals of Horatio Alger, but it is the true story of John Eberson, senior member of the architectural firm of John and Drew Eberson.

Born on January 2, 1875, son of a democratic thinking man who was a timber cruiser and shipper of white pine to England and the Americas, John Eberson inherited his father's love and admiration for American democracy, and eventually found in America, the fulfillment of his early dreams, creative architecture.

As a youngster, he spent his early youth among the Rumanian peasants, obtaining his first schooling in the village of his birth. Eventually, through the hard work and persistence of his parents, he attended high school in Dresden, Saxony, and later was graduated from the University of Vienna. He then enlisted in the 14th Hussaren Regiment of the Austrian Army for one year, a privilege extended only to college graduates.

Today, in his unique position as a specializing designer, he has a record of having constructed more than 500 theatres throughout the United States and in many foreign lands. He is generally credited with the creation of the once famous "Atmospheric Theatre", a design highly popular during the middle and late 1920's.

It was in the spring of 1901 when Eberson, with a passport and 100 florins in his pocket, boarded a ship in Bremerhaven Harbor enroute to the United States. He landed in New York, with a limited knowledge of English, and headed for St. Louis, which he knew had a large German-speaking population. Shortly after he was settled, he discovered that only 400 English words were needed to carry on an every-day conversation. Continued study at home, coupled with frequent attendance at church, where ministers spoke slowly and plainly, soon gave Eberson almost complete command of the English language.

Some time later, while engaged in operating an electrical supply and contracting shop, which eventually flopped, Eberson designed and installed electrical equipment, which included stage apparatus, for a theatre being built in Vicksburg, Miss. Through this, he met a St. Louis contractor, who was also an architect, scenic designer, and theatre promotor. A friendly business relationship was formed, and Eberson, for more than six years, acted as an architect, designer, and superintendent, specializing in theatre construction.

The responsibility of preparing plans and specifications for these theatres was given to Eberson. He then undertook the actual supervision of construction from test borings to excavation, from foundation work to the laying of brick, the detailing of millwork, and the framing of wood trusses as well as the electrical and heating layouts and installations. He worked in the field as carpenter, decorator, and scenic painter. He built flats, mixed glue paint, and sewed and stretched canvas. These years of active work as jack-of-all-trades in theatre construction have given Eberson what it takes to be a practical theatre architect and builder whose works stand as architectural monuments.

His past experiences form a strong and telling background for his present activities, which, in conjunction with his son whose education and experiences in the military engineering field, lends a world of talent, good taste, and necessary economic character to all of their designs and specifications.

Eberson, at present, as in the past, is a very active man. He is a devoted husband, father, and grandfather. His wife, Mrs. Beatrice Eberson, collaborates with father and son in the decorative branch of theatre architecture. Mr. and Mrs. Eberson make their home at 14 Sutton Place South, New York City, until the completion of their new American farmhouse in Connecticut, "Twin Brooks".

In addition, Eberson is a member of the American Institute of Architects, the Architectural League, Society of Architects, and the Building Congress, all of New York. He is also a member of the Society of Motion Picture Engineers and the Variety Club of Washington, D. C., but he does not belong to any social or golf clubs for, as he puts it, "I just haven't got the time to hit a ball and then go and look for it." Quite a warrior!





Drew Eberson

With a broad scope of education, activity and experience which includes architect-engineer, theatre designer, decorator, constructor, film director, and exhibitor-owner, Drew Eberson is well-equipped for his partnership in the architectural firm of John and Drew Eberson.

Born on February 29, 1904, Drew was raised in a theatrical atmosphere when the motion picture industry was in its infancy. His father's activities as an architect with his clients and their problems had its influence in developing Drew's desire for creative work which has since produced many outstanding achievements.

A graduate of Northwestern Military and Naval Academy and the School of Architecture at the University of Pennsylvania, while maintaining his architectural work under the direction of Dean Laird and the late Paul Cret, Drew joined his father's firm with a full and comprehensive knowledge of almost all architectural design.

During his college career, Drew mixed the aesthetic architectural studies with practical building by working in architectural offices during the summer, and also working as a laborer in pouring concrete and supervising construction work in the field. Leaving college, he jumped in with his father in the building boom of 1926, and then, with a little more practical knowledge obtained in the construction field, left for an extensive tour of Europe, studying and sketching throughout Spain, Italy, Hungary, Germany, Switzerland, and England. At the completion of the tour, he returned to the United States, and obtained his architectural license.

With the crash of 1929 curtailing architectural activities, Drew Eberson joined the New York offices of Warner Brothers Theatres, and served as an architect covering the important maintenance and retrenchment problems of the time.

Later, as an assistant director for Warner Brothers in Hollywood, he took part in the directing of many types of pictures; "B's", "A's", shorts, and even previews and talent tests; from pictures like "Penrod and Sam", "The Case of the Velvet Claws", and most of the "Perry Mason" series to important productions of the "Light Brigade", "Varsity Show", "Flirtation Walk", etc, class.

Such distinguished Hollywood notables as Paul Muni, Jimmy Cagney, Bette Davis, Dick Powell, and Ann Sheridan have worked in the spotlights and in front of the cameras which Drew Eberson helped to direct.

With the return of construction activity in the architectural field in the late 1930's Drew returned to the east, and again entered into active architectural practice as a full partner in John and Drew Eberson. During that period, he became interested in establishing a theatre for himself in Florida, and built and operated the Daytona, in Daytona Beach.

His present theatre designs reflect his insight of the management and ownership problems of his clients. Thus his experience in theatre operation and exhibition as well as in the production and direction of more than 65 motion pictures, enables him to apply the knowledge gained in the past in combating the myriad problems which face the exhibitor of today.

At the start of World War II, he volunteered his services to the Corps of Engineers, was commissioned, and, through his devotion to duty and outstanding work, attained the rank of colonel in the U. S. Army. His stateside projects include; completion of Camp Kilmer, Camp Shanks, Belle Mead Quartermaster Depot, Somerville Quartermaster Depot, and several other projects, installations that are worth much more than $220,000,000.

While overseas in the China-Burma-India theatre, Colonel Eberson served as Chief of Operations on many B-29 fields, the Burma Road, and many "HUMP" ATC depots. He has received several valuable citations from the War Department for his extraordinary ability, services, and accomplishments.

After peace was declared, Drew returned to take his place once again as the "wheel horse" in the John and Drew Eberson organization. The Corps of Engineers kept its finger on Colonel Eberson by employing his firm in the design of several separation centers such as Fort Monmouth, N. J., a pressing need at that time. Drew Eberson continues to number the U.S. Government as one of his important clients, and is now serving as consulting architect for major projects in the Canal Zone.

With the release of the theatre construction ban, he took over the big task of traveling to the far-off places, handling clients in Venezuela, Guatemala, and Cuba.

On Nov. 23, 1946, Drew and Peggy Latta were married beside the Pyramids in Mexico City, and are now living at Den Road, Stamford, Conn. Mrs Eberson is the daughter of another well-known family in show business, Mr. and Mrs. C. J. Latta, now managing director, Associated British Picture Corp., Ltd.

Drew is a member of the American Institute of Architects, New York Chapter; The Architectural League of New York, The New York Athletic Club, The Variety Club, Washington, and Phi Kappa Psi Fraternity, and takes active part in all.





Alexandre Mercil

Every wheel, in order to turn properly, must be well rounded, and possess sturdy spokes. An important cog in the huge wheel of the architectural firm of John and Drew Eberson is Alexandre Mercil, chief draftsman, chief supervisor, and over-all consultant in all phases of theatre and building construction.

Born on February 18, 1892, in Longueuil, Province of Quebec, Canada, Mercil received his primary education and early architectural training while working hard at various building trades to support himself.

When his initial schooling was completed, he served a four-year apprenticeship between the offices of Joseph Perrault, a Canadian architect, and the office of the architectural division of the Canadian Pacific Railway. His work consisted mainly of schools, churches, post offices, apartments, hotels, and railroad stations. He continued his studies in architecture while serving his apprenticeship.

Later, Mercil worked for the architectural firm of Painter and Swales in Montreal and Vancouver, British Columbia. While here, he continued his studies at "Atelier Swales", a Canadian branch of the Beaux Arts Society of Architects School of Design of New York City. Some years later, while in Vancouver, he worked on the plans and details of a large hotel. He later worked on the plans of a railroad station in the office of Ross and McDonald, Montreal.

In the summer of 1919, he joined the staff of the Board of Education, Akron, O., and for two years worked on the plans and designs of several schools in that city.

He later joined the forces of the Bureau of Architecture of the School Board in Chicago as assistant chief designer, and for approximately five years carried out the designs of many schools and auditoriums. While in this capacity, Mercil became acquainted with the office of John Eberson, and did much part-time work on many theatres and buildings, an outstanding example of which is the Mellie Esperson building, a $3,500,000 edifice in Houston, Tex.

In 1926, Mercil joined the Eberson firm as chief draftsman, and has continued to hold that position to the present day. When the extent of Mercil's training came to light, he was given the responsibility of traveling to far-off places to prepare sketches for prospective theatres. He would then return home, and prepare plans and specifications, then later on again visit the scene of construction as chief supervisor.

One of his best is the Rex, Paris, a house that withstood the wrath of the conquering Nazis, for which Mercil handled sketches, plans, and specifications, as well as supervision.

Alexandre Mercil's practical training, blended with that of John and Drew Eberson has, for the past 22 years, produced some of the most beautiful theatres and office buildings in the world, and they are today concerned with the planning and construction of many domestic and foreign projects that will outshine anything and everything they have done in the past.



An Able Staff of Experts















THE LARGE PHOTO ABOVE pictures father and son at work in their large English Renaissance office. The small photos are those of a few of the competent Eberson home office staff. Above, left to right, Fernando F. Batisti, 37, Designer, and Architect with 15 years' experience and a graduate of the Columbia University School of Architecture; Carl Lehrmann, 53, Senior Draftsman and Architectural Engineer, graduate of Build.ng Teknikum, Odense, Denmark; Robert E. Hall, Specifications writer and Civil Engineer; and Beatrice Eberson, wife of John and a professional decorator in her own right, who acts as Color and Decorative Adviser. Second row: Sanford "Sandy" Waldron, 24, Draftsman and alumnus of Pratt Institute, Brooklyn, N. Y.; Clementine T. Lanzolla, Drew Eberson secretary; and Mary A. Mulligan, Bookkeeper and Secretary to John Eberson for 31 years.

An American Cavalcade of Theatre Architecture

From Mrs. Sheehan's New Front Porch Through A World-Wide Career in Theatre and Institution Design

By NORMAN MORSE

Those who have seen the beginning of an era, and have helped that era through its stages of birth, infancy, puberty, adolescence, and maturity, may be considered the sponsors or godfathers of that particular "child."

Such a godfather is John Eberson, theatre building specialist, who was both pall-bearer and attendant at the death of vaudeville and the birth of the motion picture industry.

The architectural saga of John Eberson was already well established when the motion picture industry was slowly rising from the squalling infant of yesteryear to its present position as a giant among American industries. Eberson has seen the position of the motion picture exhibitor rise in pace with this giant and with public demand for bigger and better pictures. He bemoaned the death of vaudeville but cheered the inauguration of the moving picture and its successor, sound movies.

One of the foremost theatre architects in America, as he is known to movie men and fellow architects alike, John Eberson has, and will continue to use, his knowledge of exhibition and architectural creation to produce edifices which may be included among building masterworks.

From the "peach-box" and nickelodeon days through the era of the "Atmospheric Theatre", which was an original design of John Eberson's, to monumental bank structures, huge shopping centers, and the most modern of theatres incorporating the finest in art, decoration, engineering and functional plan, John Eberson finds himself in a unique position as a building specialist.

His abilities have been called upon by the King of Siam; the late Italian Dictator, Benito Mussolini; Joseph Stalin; and other internationally famous personages, and he was commissioned, in several instances, to design and construct buildings which met with the wholehearted approval of the dignitaries.

The United States Government, most impressive organization in the world, has commissioned the firm of John Eberson, now John and Drew Eberson, to design and construct many military and naval projects which include supply ports, quartermaster depots, airfields, and separation centers. The architectural influence of this concern, throughout the many building trades, has been felt in even the most remote corners of the globe.

To date, the Eberson organization has nearly 400 large building projects to its credit and innumerable smaller jobs. The value of these structures, when compiled, totals more than $200,000,000, a fitting testament to the ingenuity and creative ability of this unusual father and son combination.

The forty-five-year architectural history of John Eberson, although unheralded at its genesis, had its true beginning in 1908 when John, with his first established architectural firm in St. Louis constructed a balustrade porch for an elderly woman who is remembered only as Mrs. Sheehan of Hamilton, Ohio. The cost of this construction project was $200 and Eberson's fee, at 10%, was a mere $20. From this inauspicious start, the Eberson organization gathered momentum and prestige throughout the theatre architectural world.

With the arrival of motion pictures came foresighted men who are now called the pioneers of the motion picture industry. These men, recognizing the flare for design and the construction methods of John Eberson, as well as his theatrical background, turned to him for the erection of some of the first real theatres which evolved from the now famous "peach-box" shanties and nickelodeon theatres which presented 10 minute shows 50 times a day. In view of Eberson's reputation as a builder of practical and economical, yet artistic, theatres, it was only natural that many of these men turned to him for the erection of playhouses to accommodate the great, overflowing crowds during the combination vaudeville and "movie" era. His structures during that period were for such famous showmen as Chamberlain and Kindt, Judge Foley, and George Seip, and gained the nickname of "Opera House John" for the young architect.

As vaudeville continued as the top feature in the entertainment world, more enterprising showmen expanded for the future. Eberson continued to work closely with these men and added to his list of achievements the Crown Theatre in Chicago for Bob Rickson; vaudeville theatres in Little Rock, Arkansas, for Ed Korruthers; and the Majestic Theatres in Birmingham, Alabama, and Savannah, Georgia, for Karl Hoblitzelle, among many others.

The fine original designs that were utilized by the Eberson organization did much to convince showmen everywhere that John Eberson was surrounded with ample and efficient talent to fill their needs.

MRS. SHEEHAN OF HAMILTON, OHIO, poses proudly on her new balustrade porch, built in 1908. This was the first complete architectural job that was done by John Eberson from his newly opened architectural offices in St. Louis. The complete cost of the job was $200. The architects fee, during that year, was 10%; and young Eberson pocketed a mere $20. From this time on, the organization expanded.



When Eberson moved his organization to Hamilton, Ohio, it wasn't long before he gained the respect of the community and recognition among the great industrialists who had many clients in that city. It was their appreciation of his functional thinking and thorough knowledge of building detail that prompted them to commission the Eberson firm to design and construct foundries, machine shops, engine works, paper mills, pattern warehouses, and safe works. It was during this period that the Eberson company developed one of the first successful overhead crane designs that is still widely used. During his last year in Hamilton, Eberson received one of his first foreign land commissions, that of designing a paper mill in Japan. This eventually led to many foreign commissions which have since necessitated from time to time the opening of foreign offices. At that time the Eberson organization included such men as Walter Hare, Freddie Jones, and the late Bill Johnson.

Eberson's prominence among architects of that period came as a result of rendering many extra services to theatre owners such as sharing their trials and tribulations and removing from their shoulders most of the detail right up to opening night. In many instances he went without his fee and persuaded the construction companies to hold up their pressing demands until a profitable act in the theatre allowed the owner to meet his obligations. The founders of many of the big theatre chains of today were among those whom Eberson assisted. His devotion to his profession and to his clients, who were also his friends, demanded his whole-hearted support, so that, perhaps unwisely in view of present day developments, Eberson did not demand stock shares for his extra services.

By 1910, the expanding Eberson organization had so outgrown its Hamilton office that larger quarters were opened in Chicago, then the nerve center of show business. His achievements resulting from teamwork, concentrated effort, and serious application to details, combined with the soundness of his architecture and engineering designs, his ability to create and his knowledge of showmanship, had already preceded him to Chicago. His abilities as a showman were brought into play when the opening of the Chicago office was timed advantageously to coincide with the inauguration of many activities in the State of Michigan where the automobile industry was drawing hundreds of thousands of workers from all parts of the country.

An old friend of the Eberson organization, and a personal friend of the family, W. S. Butterfield, of the big and powerful Butterfield Circuit, was among the first to commission the new office for the designing and constructing of theatres in Kalamazoo, Battle Creek, Lansing and Jackson, Michigan. The Butterfield-Eberson alliance was an association of close friendship down through the years and Butterfield's passing created a deep and unfilled void in the hearts of the Eberson family. Ed Beatty, worthy successor to Butterfield, kept the building and friendship tie alive until his untimely death which served to create an even deeper scar on the Ebersons.

Marcus Heiman, a rising vaudeville executive, in association with Joe Finn, was among those who turned to Eberson for a theatre design in Evansville, Indiana. Karl Hoblitzelle, mentioned earlier in Alabama and Georgia, by this time had started his big Interstate Circuit which now dominates Texas under the able assistance of Bob O'Donnel, was another. During this association, Eberson created the now historic "Atmospheric Theatre", which was immediately acclaimed throughout the world. One of the first, the Majestic in Houston, Texas, was built for Hoblitzelle.

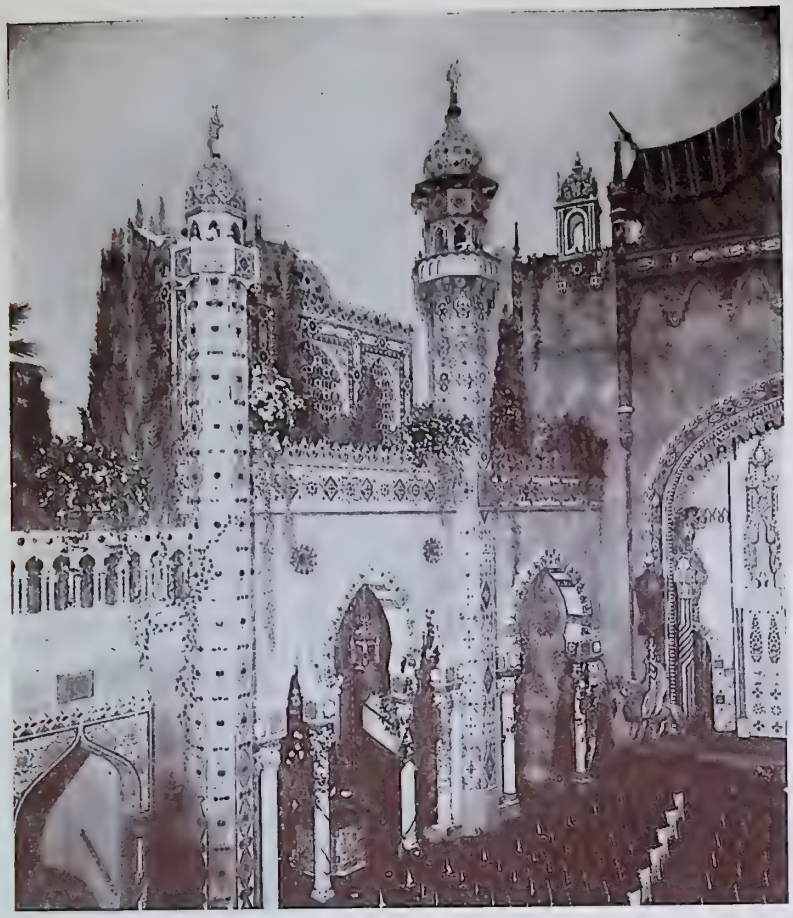
The creation of the Atmospheric style which was dramatic, colorful, historic, and nothing short of sensational as well as less costly and more effective than the prevailing style of Baroque, set the reputation of the Eberson firm several notches ahead in the feverishly competitive period of theatre construction at that time. As a result, commissions literally piled up from Australia, England, France, and other parts of the world.

With the advent of the large, presentation theatres, trick stages with elevating orchestra pits, full dressing rooms, and playrooms for the children had to be incorporated in theatre designs. Many of these new innovations were designed by the Eberson organization.

In the Atmospheric design, Eberson was able to give vent to his dreams and used his experience to create theatres which soon became famous around the globe. These included the Capitol Thea-

EBERSON MET THE CHALLENGE of the growing city of San Antonio, Texas, with the erection of the Majestic Theatre and office building in 1924. The design is highly influenced by Mexican history.





PERSIAN INFLUENCE on the Avalon, Chicago, is readily discernible. On the side of the auditorium, can be seen many historic references. Below, the mosque-like front and tile and gem-studded lobby.

tre, Chicago; Avalon, Chicago; and the $1,500,000 Paradise for Balaban and Katz, Chicago. Also the Aragon ballroom in Chicago, in association with Huzak and Hill; Riviera, Omaha, for A. H. Blank; Riviera and Riviera Annex, Detroit, for Charles Munz; Majestic theatre and office building in San Antonio for Karl Hoblitzelle; Stuart Doyle's theatres in Sydney and Melbourne, Australia; theatres for the Sinopolus Brothers, Oklahoma City; theatres for Ralph Talbot, Tulsa, Oklahoma; and several houses in Indiana and Ohio for Vernon Young and Charles Wolf.

With the growth of these architectural assignments, Eberson's construction activities became more widespread than ever and a branch office was opened in Miami, Florida, in conjunction with that state's first building boom.

Paramount pictures, represented by Adolph Zukor and Harold Franklin, were among the first to call upon the Florida office for the creation of some of their finest theatres. Among these were the Olympia theatre and office building in Miami and the Tampa theatre and office building in Tampa.

Another branch office, Houston, Texas, helped to institute not only a theatre construction activity program, but led to the building of the Niels Esperson structure in Houston, a $3,500,000 edifice which was the tallest office building in the southwest at that time.

With the success of such showmen as Sam Katz, Barney Balaban, A. H. Blank, Ed and Jack Cooney, and many others who were aided by Eberson designs, the east coast became still more conscious of Chicago and Eberson was persuaded to open a New York office. He was immediately commissioned by Leon Fleishman and Harry Moskowitz, of Loew's Incorporated, to construct the Paradise,



Bronx, N. Y.; Valencia, Jamaica, Long Island; Richmond, Richmond, Va.; Century Roof, Baltimore; and theatres in Louisville, Ky., and Akron, Ohio.

Carl Laemmle, of Universal Pictures, was another of many who utilized Eberson's services in building the Universal, Brooklyn; and the Uptown, Kansas City.

Another client on the impressive Eberson list was Warner Brothers, with whom Eberson worked very closely in their expansion of theatre operations which followed the acquiring of the Stanley Company of America.

The relationship of the Eberson organization with their clients remained as always, pleasant, friendly, and they are proud to have among their clientele, such men as Jacob and Si Fabian for whom they created such theatres as the RKO Palace, Albany, N. Y., and the State, Schenectady, N. Y.

During the 20's, the growth of the large theatre circuits, requiring big banking connections, made the city of New York succeed Chicago as the center of the entertainment world and consequently Eberson completely closed his Chicago offices and took up permanent residence in New York. Shortly after, in 1926, John's son, Drew, graduated from his architectural studies at the University of Pennsylvania, joined the firm along with loyal members of the Chicago office which included Alex Mercil, A. C. Liska, A. O. Budina, Raymond Mork, Walter Conley, Theodore Kautzky, George Shafer, Boyd Armiger, Kenneth Hayden, O. E. Hemple, and many others.

With the fatal crash of 1929, which was felt around the world, an era suddenly ended. Despite President Hoover's declaration, that "prosperity is just around the corner", all construction was abruptly curtailed and several lean years followed. The Eberson organization,



A TREMENDOUS PROSCENIUM arch is one of the finest highlights of the Paradise, Chicago. Rearing horses drawing a chariot, flying birds, and simulated sunbeams made this house a masterpiece.





SPANISH COLONIAL ARCHITECTURE dominated the design of the Aragon ballroom, Chicago, top row. This structure, which could accommodate 4000 dancers, used tapestry brick in a diaper design on the front. Glazed terra cotta ornaments are in polychrome. The interior, which looks more like a hacienda, shows the dance floor with the wood laid out in circular fashion to keep patrons from dancing against the grain. At one end may be seen the revolving stage. Second row shows the exterior of the Riviera, Omaha, Nebraska, with its Italian Renaissance motif. This is one of the most outstanding Atmospheric theatres. The interior is carried out in the same atmospheric manner. The third bank of photos shows the front of the Grand Riviera, Detroit, carried out in cream colored brick and polychrome terra cotta. The canopy is rod-supported. An atmospheric dome over the auditorium presented an acoustical problem. Note the pergola in the extreme left hand corner of the photo. To the left is the Riviera Annex, Detroit. Note that the projection booth is on the main floor shielded by a garden pool. Retiring rooms are reached by two circular staircases. All the sculpture in this house was done by the famous Lorado Taft of Chicago.





THE OLYMPIA THEATRE BUILDING, Miami, was erected on one of the most expensive pieces of real estate on Flagler Street. This structure has successfully experienced many storms and hurricanes.

which had been built from the backbone of its founder, held together even during the lowest business ebbs. Members of its backbone like Alex Mercil, A. C. Liska, and Mary Mulligan remained with the firm until the years of full and plenty returned. As more money was returned to circulation, old clients, who had never forgotten the famous Eberson reputation, returned to commission the firm in the construction of theatres that were destined to surpass anything previously done. Many new clients came to the Ebersons in search of assistance in construction of new theatres. An entirely new era had been entered.

Prosperity gradually returned throughout the world and foreign interests once more called for the Eberson ability, notably in the construction of the Rex Theatre on the Boulevard Poissonniere, Paris. This theatre gained the somewhat dubious distinction of being selected by the Nazis as their official theatre during their occupation of France.

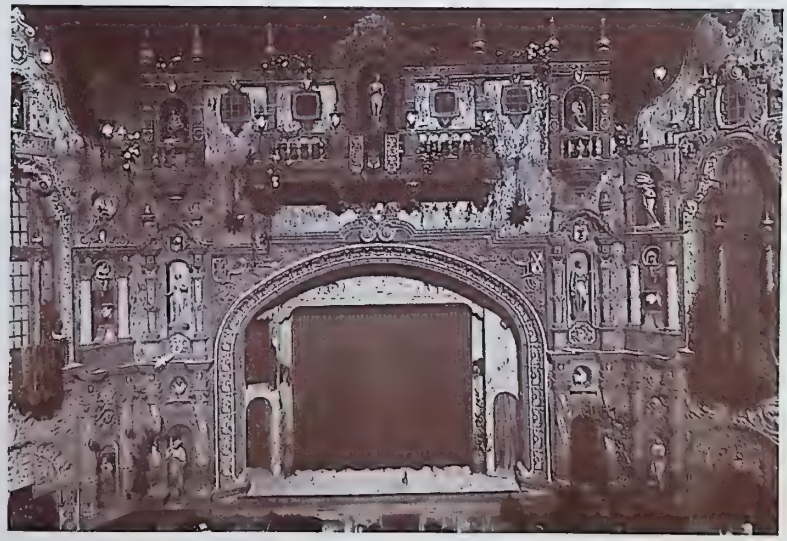
Meanwhile, in the United States, many factors came into being which substantially governed necessary changes in theatre design. The 1,000-seat neighborhood house was discovered to be the most adaptable and efficient, slowing the expansion of the previously immense downtown theatres. The growth and widespread use of automobiles necessitated inclusion of parking facilities in architectural plans, and there was no longer the big money available for large theatre investments.

The taste of the public had also changed in many different ways. The Eberson office grasped the changing trends, and brought forth streamlined, economic designs which were so eagerly accepted that, in a short time, the Ebersons were once again going at full production tilt.

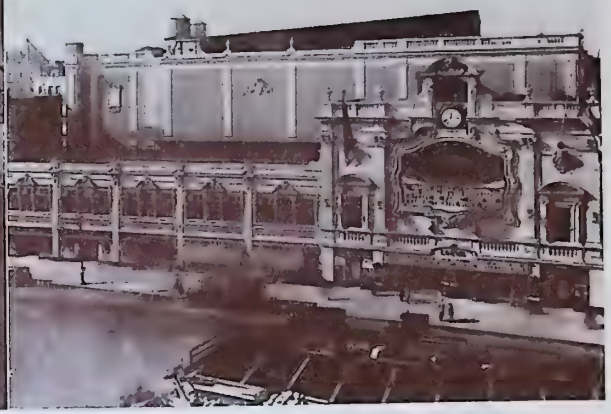
Ornamental plaster was abolished, theatres became modern without being modernistic. Wages of various trades were considered in the architectural designs, resulting in tremendous savings in construction costs. Fabrics were generously applied on auditorium sidewalls and intelligent study of exterior signs and marquees alleviated maintenance and operation costs.



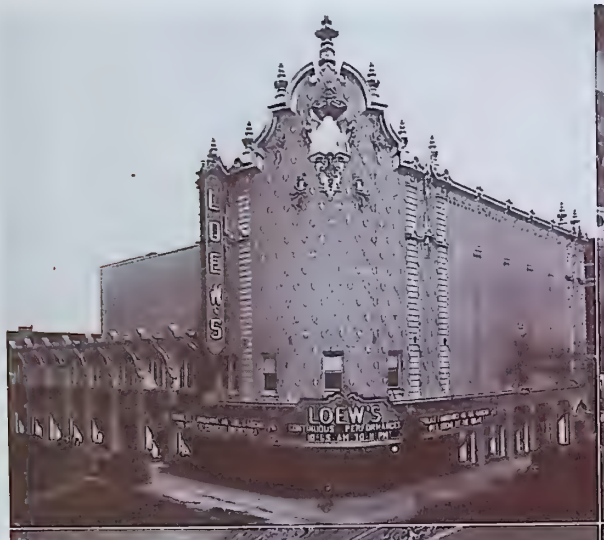
AT THE LEFT is the front of the Tampa Theatre and office building. This was a fireproof structure in Andalusian Spanish design with polychrome terra cotta for its formed embellishment. Below, the stage.

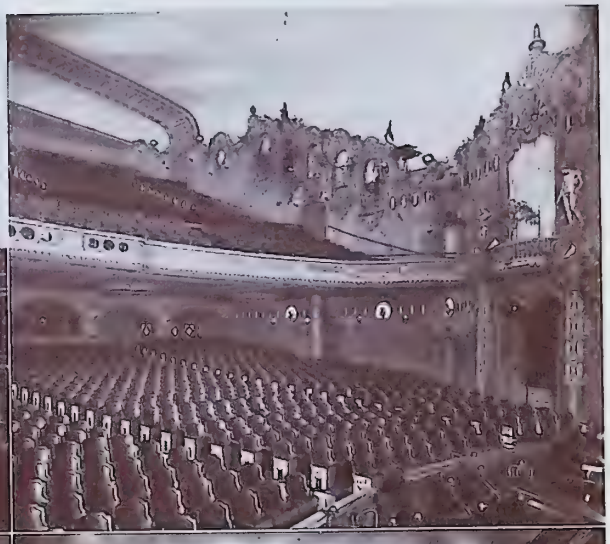




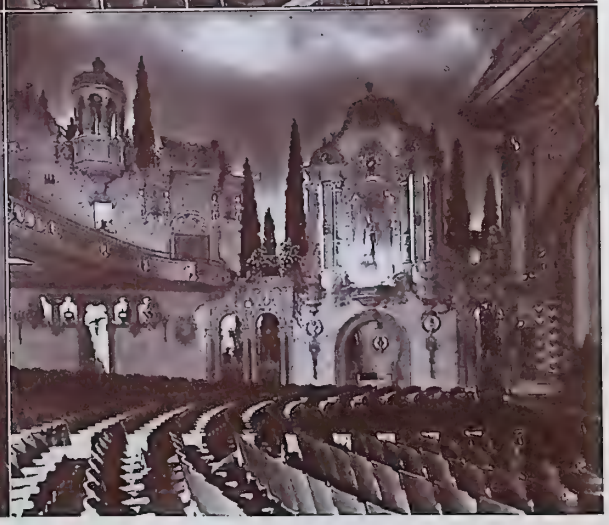


ABOVE IS THE GRAND LOBBY AND FRONT of Loew's Paradise, New York, built in 1928. The architecture leans on the French Renaissance style. Below, is a Mediterranean design, in Loew's theatre, Richmond, with a special parapet feature. The interior has a very pleasing and restful transparency. Every seat in this house is the best seat. Bottom, at the left, is a Loew's house in Akron, Ohio. Another good example of interesting atmospheric design. Bottom, right, is another Loew's theatre in Louisville, Kentucky. Note the artificial cedar trees and hibiscus bushes along side walls.











THE J. P. HARRIS THEATRE, PITTSBURGH, was erected in 1938. Above may be seen the front carried out in enameled porcelain from the lobby to the top of the facade and name sign. This modern structure is a standout between the two old brownstone and brick buildings.

The Penn, Beverly and Sheridan Theatres, Washington, D. C., for Warner Brothers were among the first which displayed these new Eberson adaptations. Others included Sidney Lust's Boro, Hyattsville, and Cheverly Theatres in the Washington, D. C., area. Lloyd J. Wineland, in association with U. Hollingsworth, also entrusted the architectural design and supervision of many of their successful neighborhood theatres in that area to the Eberson organization.

The architectural assignment for the design of the Harris Memorial Theatre in McKeesport, Pa., was acquired by Eberson through Senator Frank Harris, of the successful and famous Harris Circuit, which was then under the guidance of the late Denny Harris and John Harris. The theatre, atmospheric in design, was erected by the family in honor of John Harris, Sr., who is actually credited with the erection of the first completely motion picture theatre in the Nation. As a result, the Harris Theatre interests employed the Eberson firm to construct the Perry, Pittsburgh, and a new house in Butler, Pa. A few years later the new Harris, Pittsburgh, went up on the site of the old Alvin Theatre.

From 1936 to 1940, the Shopping Center idea developed and became a vogue for many outlying communities whose entertainment and shopping facilities were limited due to location or lack of transportation. The Ebersons were in the forefront with their developments of this idea. One of their most outstanding is the Silver Spring Shopping Center built for W. A. Julian, Treasurer of the United States, for Warner Brothers operation.

As the predominantly independent neighborhood theatre expansion continued to develop, the Eberson office once again got its share, and set many trends for the effective utilization of small budgets. A new modern theatre, compact and efficient in its operation, but theatrical in its plan and appointments, was the result. Color in lieu of ornamental plaster and expensive materials, and the gayness of the designs caught the fancy of the public after the drab depression years.

Individual owners found success and profit, building others in constantly expanding population spreads, and becoming small circuits in their own right. The theatre business was once again on the boom with the Eberson office busy with both old and new clients which included the Skirball Brothers, Sidney Lust, Phil Chakeres, The Schines, Abe Schwartz, of the Century Circuit, David Weinstock, J. M. Seider, Max Cohen, Charles Moses, F. C. Wood, Jr., S. F. Githens Newsreel theatres and many others. In tune with the times and the average standard of living, great stress was laid on patron comfort and all equipment relating to it. More comfortable seats, better sight lines, better acoustics and sound, and real luxury in rest rooms, lounges and toilets, —rather than ornately decorated interiors,—were the Eberson aim.

The standard of living throughout the United States gradually rose to its highest peak in American history until, in 1941, the appalling catastrophe at Pearl Harbor threw the United States into World War II. 1942 brought about the curtailment of theatre construction and Drew Eberson joined the Corps of Engineers, U. S. Army, while John became a member of the War Production Board, as a so-called "dollar-a-year-man." The U. S. Government, aware of the reputation of the Ebersons, commissioned them to design and construct a 1500-bed hospital at Brentwood, Long Island, N. Y., Camp Hero at Montank Point, housing and other facilities for Fort Monmouth and work at the U. S. Military Academy, West Point.

Drew eventually rose to the rank of Colonel and acted as contracting officer for hundreds of millions of dollars of

ONE OF EBERSON'S FOREIGN PROJECTS was the Rex, Paris in 1932. In making the design study of this house, the architect created a model and through it developed the use of mirror mosaics executed on the exterior facade. This theatre became the official entertainment center for Nazi G.I.'s during World War II. Below can be seen the effects created by unusual day and night lighting behind the glass.





ABOVE IS THE PERRY, PITTSBURGH, built in 1938. The entire front is executed in enamel iron to offset Pittsburgh's smoke and soot. Side walls of the auditorium, below, lean toward simplicity.

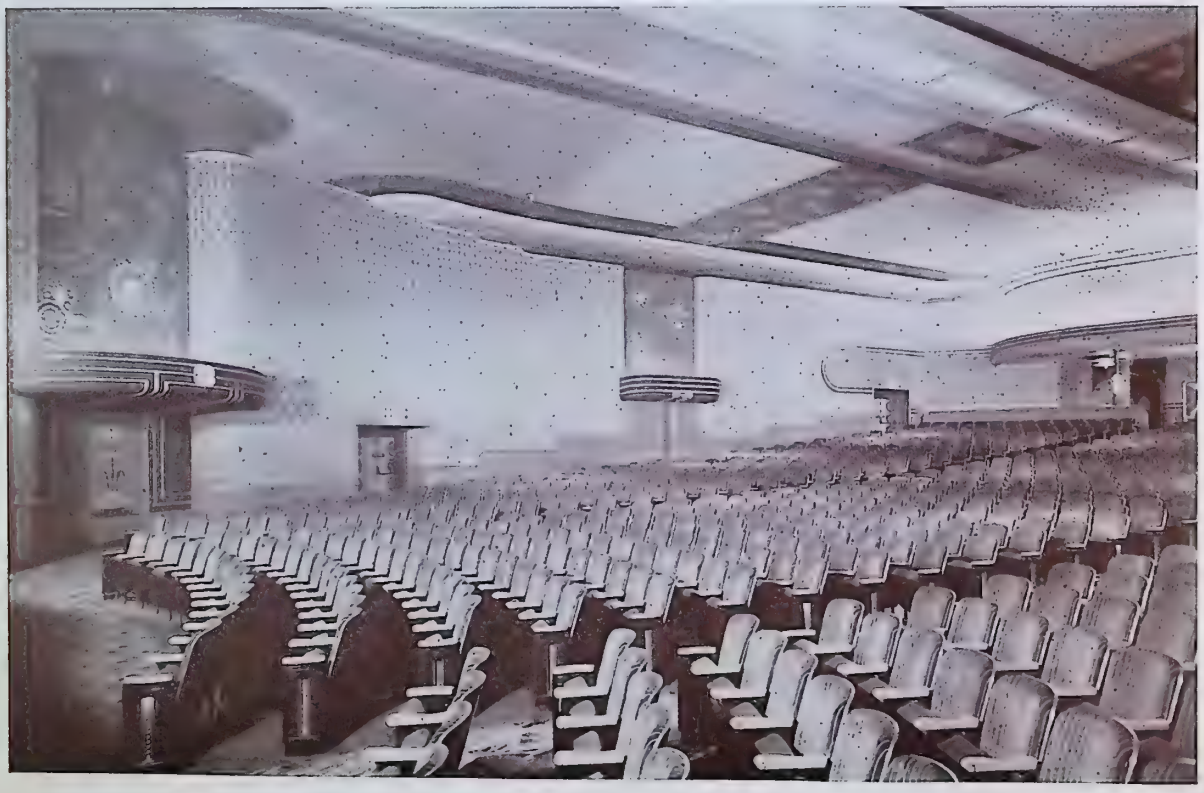
work, in both the U. S. and the China-Burma-India war front.

John Eberson commuted between Washington and New York, serving the U. S. Government and the theatre industry on the W.P.B. while continuing to supervise the activities of the architectural firm in New York.

The cessation of hostilities brought father and son together again in their partnership and both were greatly influential in having the construction ban lifted from theatres. In many instances they were successful and with untiring efforts continued to apply their knowledge and experience in theatre building to the construction of many new houses. In areas where population had shifted greatly, due to the war, Eberson-designed houses sprang up almost over night in reply to the great public demand for proper entertainment facilities.

With the final lifting of the construction ban, the Ebersons were able to put many shelved plans into construction for their far-sighted clients. Consequently, many 1000-seat neighborhood theatres were built from Washington to Texas and Ohio to New Jersey.

Mexican interests, which had watched the Ebersons closely, soon commissioned them, through a large banking group, to provide architectural and engineering plans plus personal supervision for their extensive building program in Mexico. The Ebersons therefore opened an office in Mexico City and completed many large projects. They are presently supervising the completion of the more than 4000-seat El Roble Theatre and 14-story office building, on the Paseo de la





AN UNUSUAL AUDITORIUM EFFECT is gained by the protruding structure in the center of the ceiling of the Penn, Washington, D. C. An illusion of tremendous depth can be gathered from the photo below.



Reforma, Mexico City. Several fine residences are also under construction in that city. A lot of the Mexican confidence in the Ebersons is due to the usual Eberson practice of paying attention to the many meticulous details. An example is the preparation of their plans in Spanish and transposing the measurements into the metric system. The result was an expanding of Latin American activities which spread to Guatemala, Venezuela, and Cuba.

The experiences of the Ebersons in dealing with the problems of Latin America, in construction and temperaments, has earned them a reputation which has since spread to many other parts of the world.

The United States Government once again called upon them to act as architects and consultants for many construction projects in the Panama Canal Zone.

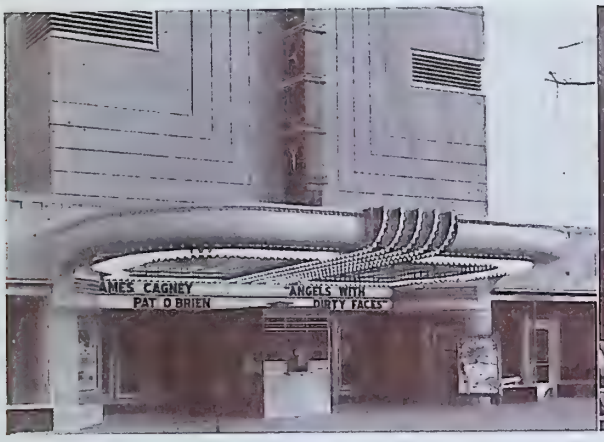
It wasn't long before most theatre operators and architects realized that houses constructed as far back as 1930 would require remodeling to conform to new building codes which made public safety a prime requisite. In this field the Ebersons once again contributed their share of colorful, harmonious, decorative, and economical designs. To meet this situation, the Eberson office set up a special organization, which gave competent engineering inspections, appraisals, and recommendations, turning dilapidated houses into modern, up-to-date theatres.

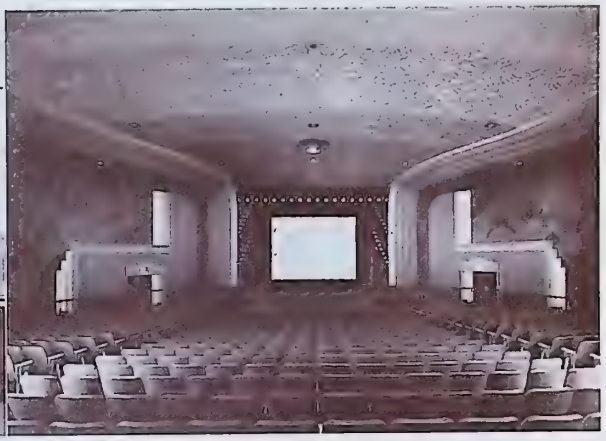
Not only independents but many of the larger circuits recognized the efficiency of using the experience and study





THE 1000-SEAT SHERIDAN, Washington, D. C., is an example of streamlined decoration. Walls are covered with rockwool and cut velour in blue, maroon, and green. The front of this neighborhood house, above right, is modern and executed in brick. Warner's Beverly, Washington, D. C., was built in 1940. The canopy is portland cement plaster on a steel skeleton. The auditorium shows a streamlined tapering toward the floating screen.





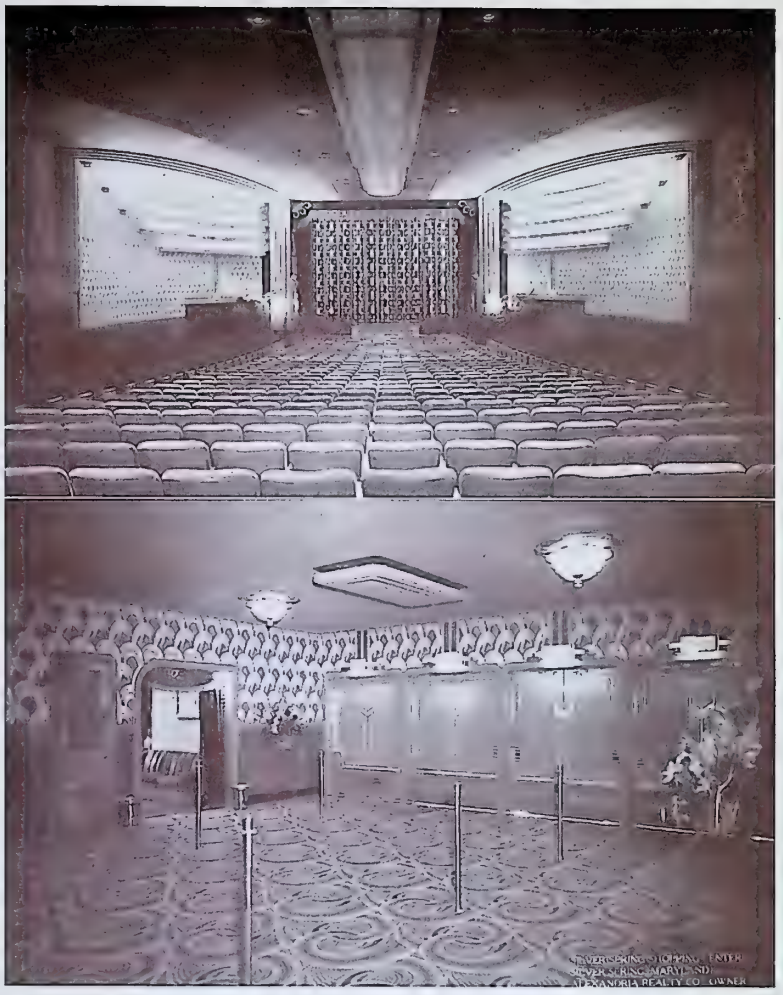


of a large organization rather than the individual effort of their own home office engineering, which might produce a biased report and record. As a result, this type of remodeling activity took a prominent place in the Eberson office.

In some cases theatre men established a regular routine program to cover the physical condition of their properties. As one of the oldest and largest offices of theatre specialists, many states and municipalities have also requested the Ebersons to serve on their boards during the preparation or revising of building codes.

With 1949 already partly gone, another phase of architectural activity seems to be apparent. The Government's present attitude toward the theatre industry has necessitated many changes in ownership and operating policies. A number of theatre owners and exhibitors who have been released from partnership and pool arrangements are now financially fixed to give their circuits a much needed modernizing lift in their physical assets. Many new innovations such as maintenance, concessions, and the public taste must be taken into consideration in present theatre designs.

With property ownership clarified, the Eberson organization can probably look forward to a continuing era of service to the industry it has served for so many years. Alert to each changing trend and industry development in the past, their sights are set on the future with clarity and determination to lead. Of such organizations the industry can well be proud.



ON THE BORDER between the District of Columbia and Maryland, lies the Silver Spring Shopping Center, below. This was one of the first designs of its kind. The center has front and rear parking with the rear lot providing space for 600 cars. The Silver Theatre, part of the huge construction job, seats 1000 people. The Auditorium of the theatre, right top, has Damask sidewalls, air distribution by ceiling trough, downlights and shelf lighting flanking the proscenium arch. The lobby is shown at center.



Work Under Way at Home and Abroad

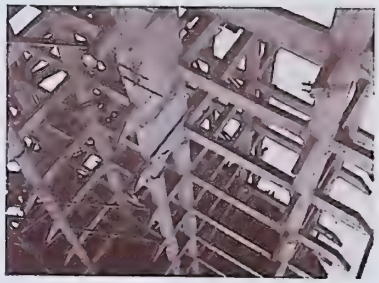
The Continuing Progress of the Eberson Organization is Marked by Numerous Current Construction Projects

To support large home office facilities, drafting rooms, and numerous field offices, any large architectural firm must encourage a diversity of interests both in type of structure and geographical area. This has been the Eberson success. While the theatre has been, and continues to be, the central theme of its activities, its very nature makes it the important part of large developments such as office buildings, shopping centers, community projects, etc. As a result, theatres dominate, but many other buildings accompany, and each successful, well-supervised structure widens the service area.

When the announcement of the termination of the theatre construction ban was received by theatre men throughout the United States and abroad, theatre building programs once again went into full swing. A rapidly increasing population, population shifts at home resulting from the war, and available capital from wartime spending in some areas abroad created a minor boom. In many instances, the Eberson Organization was commissioned to design and construct these new projects. With their influence in the many building trades, both foreign and domestic, it was much easier, though still difficult, for the Ebersons to conform to foreign tastes and temperaments. Although they utilized local labor on most foreign projects, many unforeseen problems arose. In Mexico, for example, native laborers who were paid 15 cents an hour, a legal wage, refused the building of elevators to haul bags of cement several stories in the air. They preferred their age-old, dangerous wooden catwalks, and carried the cement on their shoulders. Other laborers, ox-cart drivers, refused the use of modern dump trucks. They preferred to use their carts which would hold only a handful as compared to a truck.

These problems, seemingly insurmountable, would tend to have delayed entire construction programs with resultant tremendous losses to both architect and contractor. However, in true Eberson fashion, local conditions were intensely studied, and native labor was ingeniously directed so that all Eberson foreign projects were completed on schedule. In fact, in many instances, deadlines were beaten.

THE SMALL PHOTO BELOW shows the extensive use of concrete in the construction of the Junin Theatre and office building in Caracas, Venezuela, illustrated in the rendering below.









ABOVE IS A RENDERING of the Celina, Celina, Ohio. The house is being built for the Chakeres-Dwyer Theatre Company and is said to be the latest thing in design for economical maintenance. To the left is a photo of the almost completed front. Note the unusual effect gained by clever use of brick above the marquee.

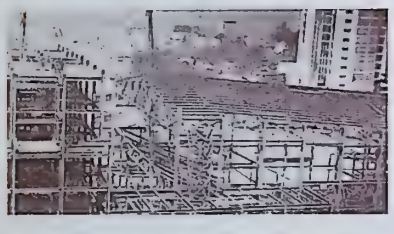
TO THE RIGHT is shown construction getting underway on the concert stage of Lewisohn Stadium, New York City. It is being built for the city and will be used for the famous Stadium Concerts and will also serve as a field house for City College athletic events. The college appears in the background. Below is a rendering of how the huge stage will appear when completed.



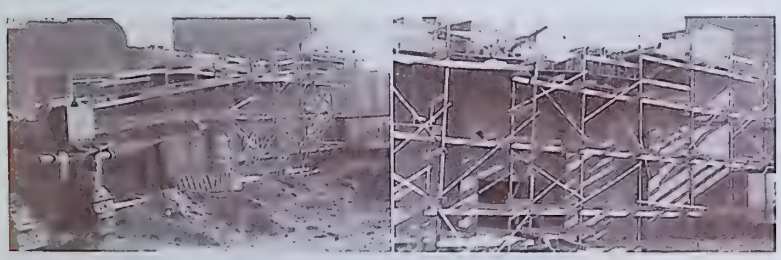


Part of the credit for so successfully utilizing native labor must go to Drew Eberson, who, with his experiences in many foreign lands while in the army, was able to make the most of difficult situations. According to Eberson, although one ox-cart holds a pitiful handful of gravel, thousands of ox-carts can hold more than a fleet of dump trucks. Secondly, there are no gasoline, tire, or mechanical troubles. Native laborers, with their small wages, preferred to sleep beneath their carts rather than live in provided housing. They tended their own oxen, and lived on very meager diets. Such ingenuity, displayed on many foreign jobs, has greatly enhanced the Eberson prestige while their foreign offices have been expanding, and has done much in promoting our government's good-will policy toward our Latin-American neighbors. A continuance of the Eberson "extra services" is certain to keep its organization large in the theatre construction field.





THE EL ROBLE THEATRE and 14-story office building on the Paseo de la Reforma, Mexico, D. F., is still almost a year from completion. An Eberson rendering of how this 3200-seat house will appear when completed is shown above. To the left is a photo of how far the construction had advanced at the end of 1948. Huge steel girders are shown being bolted into place. Below is a new theatre being built in the Parkchester section of the Bronx, N. Y. The small photos show scaffolding lining the side walls. A good idea of how the theatre will appear when completed may be gathered from the large photo at the bottom of the page. The stores were part of the original building plan.





In 1947, the Eberson firm completed the construction of the Orfeon for Operadora de Teatros, S. A., Mexico, D. F., a 3200-seat house in Mexico City. This is one of its most outstanding designs in that country.

It is presently engaged in the construction of the El Roble and a 14-story office building on the Paseo de la Reforma, Mexico, D. F. The theatre will be a gigantic house of 4,000 seats, and is scheduled to open late in 1949.

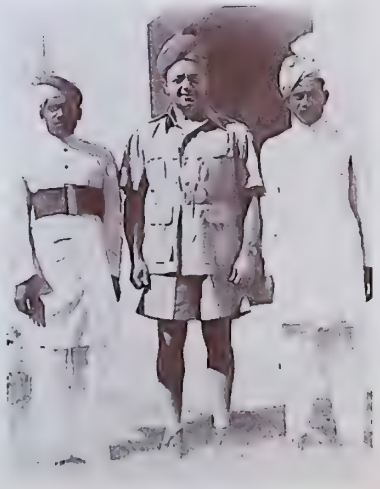
In Caracas, Venezuela, the Ebersons are engaged with the construction of the Junin and office building on the famous Plaza Urdaneta for Sr. V. Vallenilla Lecuna. This unusual structure is the latest in modern design, and, due to climatic conditions, is able to utilize the entire glass facade. The vertical columns on the corner are white glass, illuminated from within, and the spandrels between the windows are also glass, with color lighting introduced from behind the glass. The office building contains the latest facilities, which include the proverbial penthouse from which can be enjoyed the unusual scenic views accorded in Caracas.

At home, Lewisohn Stadium is under construction for the City of New York. This will be the home of the famous Stadium concerts, and will also contain a field house in the stage for City College athletic events.

In Celina, O., the Celina, which incorporates the latest for economic small town operation and maintenance, is being built.

Other building projects, foreign and domestic, too numerous to mention, are also under construction.

COLONEL EBERSON seems to have just washed his hair and doesn't know what to do with it. The photo was snapped at Delhi, India, in 1944, when Drew served as construction officer of that area.



Plans Alone Do Not Create a Theatre

An Outline of the Necessary Highly Specialized Knowledge, Ability, Experience and Diligence

According to the views of Architects John and Drew Eberson, the service of a skilled theatre designer should start with the very selection of the lot, and end only with the successful running opening night. The theatre owner or lessee should be consulted and queried on his objectives and operating technique; but should never be bothered with details even as minute as the keys and ashtrays. That is what the architect is paid for. And that is why he must have a thorough knowledge of the theatre industry and theatre operation, in order to earn his 6%.

Many millions can read lines,—but there are only a very few great actors. Many millions can cook,—but there are only a very few great chefs. Many millions can draw and paint,—but there are only a very few great artists. To become great or even proficient in any endeavor, there are certain definite ingredients of training, experience, work, and creative gray-matter that must be carefully husbanded and coordinated in order to produce an above average result.

The practical profession of architecture has its own definite ingredients necessary to success, which could probably be summarized as:

1. Well-organized experience and knowledge of objectives.
2. The ability to create a well-integrated functional plan.
3. Thorough supervision that leans on experience to premeditate the most minute details of structure, decoration and equipment.

Because theatres are very highly specialized types of buildings, the possession of all three of these ingredients as they apply to the theatre building is a basic necessity for the theatre architect. To have theatre knowledge without originality in plan or attention to detail is not enough. To be a good draftsman without knowledge of the theatre or ability to supervise is not enough. To be a good supervisor without the experience to know what to supervise or have skilled plans is not enough. All three must be there, and each is as important as the others, if a good, workable, attractive theatre is to result.

An interesting insight to the many ramifications with which a theatre architect has to contend, may be observed in the following fictional conversation which is typical of the discussions between architects and prospective theatre builders.

Mr. S.: "Good morning, John. It's been a long time. Remember that theatre you designed for me about six years ago?"

J. E.: "Yes, indeed, Sam. What can I do for you?"

Mr. S.: "Well, the old house is still there, and in fine condition. Painted the outside once or twice but the interior is good as new. I'd like to build a neighborhood theatre in A——— to seat about 1,000 people. I've got two possible locations, and want to discuss them with you. You can help me make a decision since you sit in on so many conferences with others. I saw a theatre you designed in H———, and its that type I have in mind. I liked the layout. What was the cost?"

D. E.: "Plenty! But it's the best theatre in the town, and the owner was anxious to build a bigger and better house to avoid any possible competition."

Mr. S.: "I have one location on the main thorofare, and another on the edge of the commercial section between the residential district and the shopping area. The first is a typical corner located on two streets with an alley in the rear. The second is much larger and deeper, and if I buy the property in the rear, I can provide for off-street parking."

J. E.: "The one nearer the residential district would be much better."

D. E.: "Definitely! On your survey sheets it shows that there is a high school within a block and a half of your second site, and your main street lot adjoins the postoffice. Not so good. That's another reason why the neighborhood site would be much more advantageous. As far as lot sizes go, you could take the neighborhood lot, and lay out a theatre so that the economical width of the theatre auditorium can be dictated by the maximum legal number of seats in a row. That can't be done with the main street lot, which will probably cost more anyhow."

J. E.: "Have you decided whether you want a one-floor house or do you want a small balcony?"

D. E.: "Have you studied the advantages and disadvantages of a stadium-type theatre?"

Mr. S.: "That's what I want to discuss."

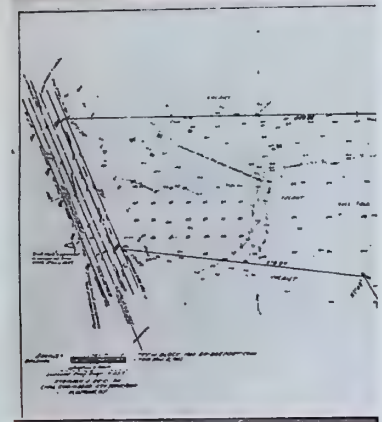
J. E.: "Analyzing the first lot, and considering its shape and size, a one-floor house will serve your purpose best. It will cost less than the stadium or balcony types and be easier to manage. But, just what would be your operating policy, a one or two price house? Smoking?"

D. E.: "It might work out to your advantage to build a stadium type, and place stores under the stadium portion. But it will cost more and the bother of handling the stores might not pay. A one-floor house would be most economical. Your survey shows watermain, storm and sanitary sewers all in very good spots. And your lot slopes toward the rear. This will give you less excavation and height of wall. Your neighborhood lot is also facing west, and the

DREW AND HIS FATHER, below, in one corner of their office, are discussing the possibility of an improvement in the El Roble theatre and office building in Mexico. Under John Eberson's arm may be seen another rendering, that of the Junin theatre and office building in Caracas, Venezuela. Such discussions as these have often led to new designs for which the Ebersons have long been famous.











afternoon sun must be taken into consideration. With the lobby on the corner so as to shield the foyer from the sinking sun, matinee interference can be avoided."

J. E.: "The rest of the front should be used for retiring rooms. It won't pay to build stores in this location because that would call for unnecessary basement space in the front. To give the building more important appearance, the second floor can be employed for mechanical apparatus, projection equipment, storage space, and any needed offices."

Mr. S.: "That sounds perfectly reasonable."

J. E.: "A complete architectural survey will be necessary before anything else. It'll cost money, but it's important and also part of your title protection."

Mr. S.: "The town is a typical American community, and the general architecture is more or less American Colonial in most of the buildings."

D. E.: "A Colonial exterior and interior may fit perfectly. There is a way to transpose Colonial architecture into the scale of a theatre auditorium without disturbing the charm of such treatment. There are also ways and means to produce Colonial details in paint and color effects on a very economical basis. We believe some recent theatres, done by architectural modernists, are very harsh and irritating and such treatments do not belong in a theatre."

J. E.: "What the modernists call the attractiveness of simplicity is pure nonsense. Real art is not just tiring and dormant simplicity. Nature is art; full of color and graceful shapes. She must have had a good architect, let's copy Him. Most modernistic interiors remind me of shiny money vaults with their chromium and metallic finishes and grotesque ornamentations. Some interiors have had leaning sidewalls. This is probably done just to be different regardless of how much good taste is sacrificed or how much disturbance is created in the normal and necessary balance of design. Some use acoustics as an excuse for such grotesqueness. Others use light reflection. All this can be accomplished without breaking every law of good architecture. Some foyers and lobbies have featured designs which closely resemble French picket fences or exteriors of corrugated metal tobacco warehouses. This bizarreness is also applied to the typical modernistic giant carpet designs."

D. E.: "Some of the recent furniture designs for theatre lounges have spindly chrome piping supporting a bloated cushion seat and back combination that appears to be floating in the air. No consideration has been given for architectural thinking in regard to masses being carried on a base suggesting strength, grace and security. This holds good not only for the individual arm and side chair, but also makes overstuffed sofas standing on spindle legs seem ridiculous."

J. E.: "Your best bet, Sam, is a dignified Colonial brick exterior and a modified Colonial interior, carrying this style from front to rear, including lobbies, foyers, and retiring rooms. A strictly modern, but not modernistic front and interior might also be all right."

D. E.: "A Colonial interior in blue or gold or a modern interior in blue, gold and white or grays, pale greens and black and white would make excellent combinations. As to construction materials, at the present time, wall bearing cinder or cement block faced on the facade with brick and painted with waterproof slush and finishing for sides and rear offer the lowest costs. A reinforced concrete foundation will avoid as much basement wall and excavation as possible. This can all be accomplished by placing mechanical equipment above ground. The width of your first lot necessitates steel trusses and pre-cast lightweight slab. They would be ideal for the roof. Any of the new light aggregates which have been recently tested now are recommended for roof slab construction."

Mr. S.: "What would be best for sidewall, acoustical plaster or flameproof material?"

J. E.: "It's a toss-up. There are light plaster aggregates and fillers that are popular with plaster contractors but these add to the decorating costs. A good acoustical treatment for the rear wall, and side walls in damask would be best."

IN THE COLUMN at the left, top to bottom, may be seen the lot selected as a building site, next the plot plan for the site, thirdly, the Eberson drafting room where the plans are drawn, excavation getting underway, foundation work, and lastly, the complicated steel erection.





Mr. S.: "What about the cost of mechanical trades, such as air conditioning, heating and cooling, electrical work, and plumbing?"

D. E.: "Mechanical trades will easily absorb almost 30% of your building costs. Most architects, including ourselves, are in the habit of over-designing the cooling installations. A very careful analysis of the weather and climatic conditions will be absolutely necessary. Recent calculations and statistics covering running theatres show that most final recommendations and specifications will probably carry a much lower capacity for the cooling units than hitherto, and thus save considerable expense in original cost as well as running expense. There aren't many days in the year of extremely hot weather. Everything has gone up. Picture costs, operating expenses, fuel, everything, and its very doubtful that the exhibitor will be able to increase admission fees. Let's look at every phase of building and operating costs, no matter how small or insignificant the item may be. It all adds up in the long run, and helps to protect a safe and equitable building project."

J. E.: "In addition, many controls and lighting arrangements for theatres have also been very much over-designed; too many switches, too many circuits, and too much scattered fixture display. The market now offers economical illuminating tubes and lamps, which, if properly placed, will give all the illumination needed to make the meter digits run slower."

Mr. S.: "That would be cove lighting, and that's impractical. You can't get at it to keep the troughs clean."

D. E.: "That's very true in most cases, but with a plan for the proper location and construction of accessible coves and downlights, laminated or beveled sidewall light troughs can be avoided."

J. E.: "It's best all around to reduce the runs, number of circuits, and the number of panelboards to a minimum. The style of elaborate electrical layouts, so popular a few years ago, has definitely become outmoded. An electrical distribution system which will be much simpler and practical would be the best."

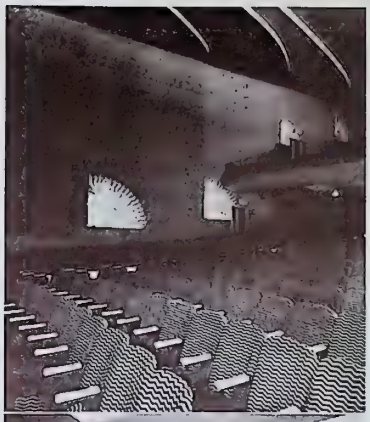
Mr. S.: "I certainly don't want to spend one penny more than necessary in order to give my patrons a modern theatre with a maximum of comfort, void of any extravagancy, of course, and I want the building constructed so that repairs won't be necessary every couple of years. I'm particularly interested in a good roof."

J. E.: "You've probably noticed that you haven't been asked to reveal how much money you want to invest. There is a definite relationship between venture capital and investment capital. After sketches have been prepared and approved, a fair estimate will be possible. You can then easily determine the amount of safe investment capital, basing your decision on your experience, and, at the same time, considering the amount of investment capital which you are willing to use."

Mr. S.: "When you bring me the sketches, we can arrange our architectural contract. Is is the same as before, six percent for plans, specifications, and general supervision?"

J. E.: "That's right. Before you go, I can tell you that I have a very novel idea for the interior of your theatre, and, frankly speaking, I'd like to experiment on you. No proscenium arch, a floating screen, — that's all the clues you'll get. It's just an idea to break away from the stereotyped, and reach out for something that will give us a very economical scheme. Thanks for coming in, Sam. You'll have the sketches within two weeks, and then we can discuss the marquee, the extent of changeable letter display, and whether or not to use a vertical, wall or marquee sign. It will depend entirely upon the exposure of your lot. Goodbye, Sam."

And thus a new, modern theatre will progress to its gala opening night some six or eight months later. From close collaboration with the owner on all major objectives, and a studious attention to details by a trained and experienced architectural staff, the work will flow in harmony and without incident until the patrons of the town of A—— greet the new theatre with "Oh's" and "Ah's". This is the job of the architect! This is why he gets paid!













BELOW LEFT TO RIGHT may be seen the plastering work underway, then the decorating. At the top of the column at right is the completed modern auditorium, then the shining washroom facilities, water cooling and air conditioning equipment, and lastly, the "Opening Night".

Eberson Accomplishments, 1901 to 1949

A Necessarily Limited Pictorial Review That is Representative of More Than 400 Theatres Designed





From the days of the nickelodeon to the current day of modern and substantially built motion picture theatres is a span of more years than most men care to recall. To John Eberson, and now to his son and associate, Drew, those years have been ripe with success and satisfaction. They recognized the needs of the great pioneers whose foresight built the motion picture industry, and in brick, mortar, and steel carved a record on it of their particular design abilities. Naturally a complete pictorial and editorial record of so many buildings is not possible to achieve, so an attempt is here made to chart the course of theatre design by means of outstanding structures that originated from the drawing boards of Eberson draftsmen, and rose to the sky under Eberson supervision down through the years.

Elsewhere in this volume will be found a picture of John Eberson's first job and an editorial record of his achievements in the hinterlands of the middle west that accidentally bent the young designer toward the theatre which has been his hobby, obsession, and lifework ever since. During these early days, many vaudeville, combination vaudeville and motion picture, and relatively minor motion picture theatres resulted from Eberson drawings, sweat, and tears, but few were photographed, and of those which were, the ravages of the years have left their mark on the prints now in existence to the point of making their reproduction an impossibility. So, skipping the faded and yellowed photographs of an era that was not yet truly motion picture-dominated, the pictorial thread is picked up at a later date when the motion picture started to feel its box-office power.

In 1922, when vaudeville was the prime feature and motion pictures only a husky assistant in the entertainment world, John Eberson designed and constructed the Orpheum and office building in Wichita, Kans., (Photo No. 1) for the then big and powerful Interstate Amusement Circuit.

Eberson's prestige in Wichita resulting from this accomplishment caused him to be called upon in 1925 to design and construct The Masonic Temple in that city (Photo No. 2). It was a classic structure which was then, and still is, one of the most pleasing, substantial and important buildings in that territory. At that time, he was associated with another architect named Weaver.

During 1926, another Eberson "first" was added to the long list of Eberson accomplishments through the construction of the Capitol, Flint, Mich., (Photo No. 3) for W. S. Butterfield. This was one of the first, if not the first, theatre in the country to have bowling alleys built into the cellar area. Due to economical planning and special treatment for acoustics and vibration, this proved to be another profitable adjunct to the theatre building.

The same year saw the construction of the Calumet National Bank, Chicago (Photo No. 4). The foundation of this structure is deeper than the building is high because of the treacherous ground upon which it was built. Plans called for caissons and subterranean foundation. Photograph illustrates the lavish use of Travertine marble.

W. S. Butterfield's State, Kalamazoo, Mich., (Photo No. 5) was one of the first in 1927 to use the Eberson "Atmospheric" design. This was the era of full stages with fly galleries, and scenic designs leaning on the Mediterranean style.

Also in 1927, Eberson designed and constructed the Capitol, Grand Island, Nebraska., (Photo No. 6). The facade of this particular playhouse indicates the practice in that period of utilizing polychrome terra cotta in combination with native tapestry brick.

And here illustrated is an interesting load test conducted on the balcony of Carl Laemmle's new Uptown, Kansas City, (Photo No. 7), another 1927 achievement. About 37,000 pounds of sand bags were piled in the center of the balcony with a total deflection of 5/16 of one inch, which proved to be more than 10 times the required resistance. The interior of the Uptown (Photo No. 8) shows that the two sides of the auditorium are not alike but are still symmetrical. The richness and elaborateness of this interior against the blue clouded sky ceiling made history in the west for this type of architecture.

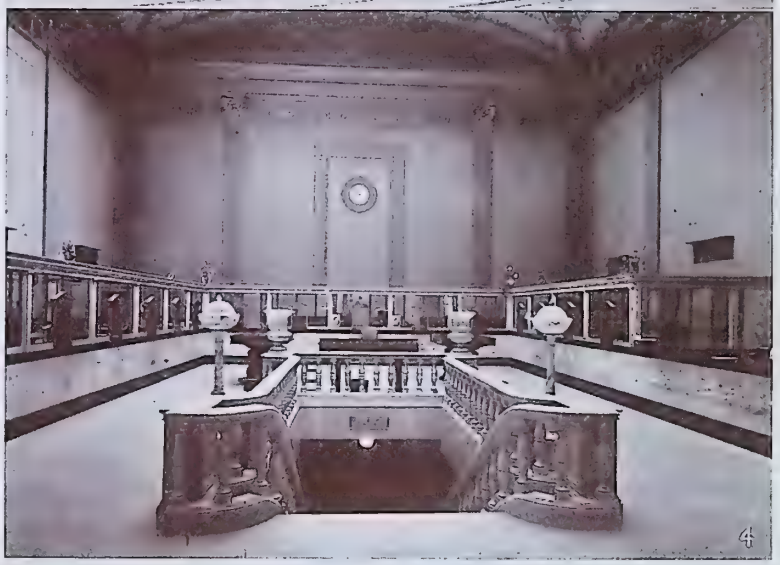
The completion of the Central National Bank, Richmond, Va., (Photo No. 9) in 1929, one of that city's most outstanding structures, again indicates the diversification of ability of the Eberson Organization in designing other types of commercial and monumental structures beside theatres. The interior displays the showmanship of advanced ideas. The open teller's counters (Photo No. 10), which are still considered to be the last-word in bank planning, were one of the first to be designed eliminating the old cages and screens.

In 1930, the Paramount, Nashville, Tenn., (Photo No. 11) was completed. The photograph, illustrating a name sign that was bigger than the theatre itself, is typical of that period.

Harry Warner, in 1931, honored Drew Eberson by commissioning him to design and construct the Lewis J. Warner Memorial building at Worcester Academy, Worcester, Mass., (Photos No. 12 and No. 13). This outstanding monument to the memory of Lewis Warner, Harry Warner's son, and presented to the academy by the father, is one of the real achievements of the Eberson Organization. The design received the New England School Award for outstanding



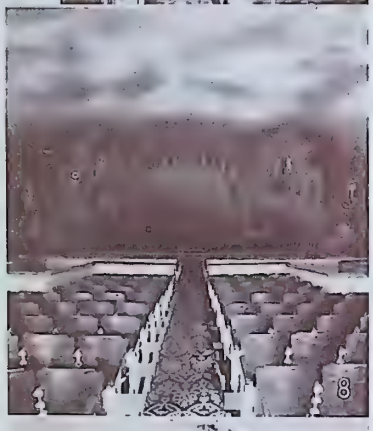
3


4











architecture. Unusual interior richness of the Memorial Building included classic decor and outstanding murals depicting the leadership of youth. The building was an architectural challenge in that it was designed for multiple use in school activities.

In 1933, during one of the lowest ebbs in American business history and the beginning of the Roosevelt rebuilding, the Palace, a vaudeville theatre, was completed in Minneapolis (Photo No. 14). The building was faced in dark red brick and cream polychrome terra cotta. Admissions in those days were only 10 and 20 cents.

Between 1933 and 1937, little theatre construction was undertaken until the American public slowly climbed from the depths created by the depression. As money became available, many theatre owners embraced the 1000-seat neighborhood house rather than risk funds on huge downtown ventures. This also was the era of decentralized shopping and expansion of neighborhoods. In this field of construction, the Ebersons were among the first with the Earle, in the Borough of Queens, New York (Photo No. 15), in 1937. This house was also one of the first to be built with the now popular stadium design.

That year also saw the erection of the Colony, Cleveland, (Photo No. 16). Located in Shaker Square, it was part of a Van Sweringen development of gigantic nature, which covers more than 300 acres. The house is carried out in strictly Georgian Colonial fashion. Its front elevation combined with its sign and marquee truly follow that style of architecture, thus melting into the landscape which Van Sweringen had created in Cleveland.

The following year, 1938, when another era of theatre building had been entered, saw the completion of the Novo, Cumberland, Ky., (Photo No. 17). The photograph presents a study of the facade, marquee, etc., and indicates the value of the then modern attractive name sign as against the passe architectural designs of earlier years. Note the crowd of movie-goers passing-up the old movie house next door to enter the new Novo.

Another 1938 house was the Nostrand Avenue, Brooklyn, N. Y., (Photo No.





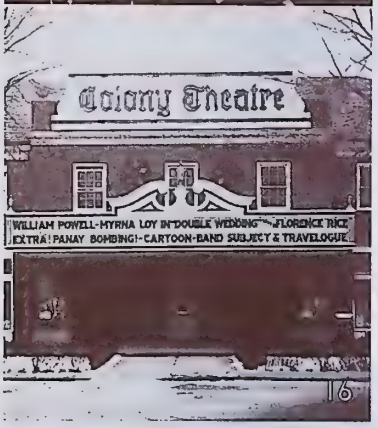








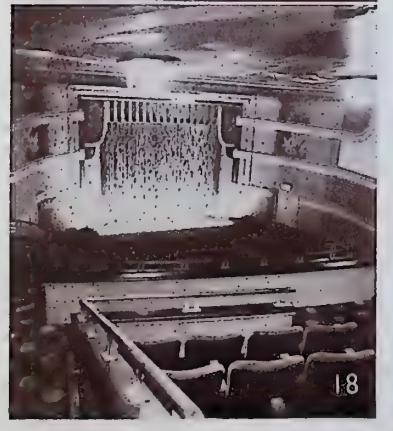
15



16



17



18



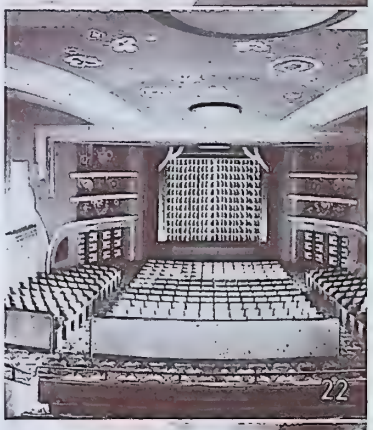
19



20



21



22



23

18), a house designed for a thickly populated area. Full architectural consideration and study were given to the temperament and taste of the class of people it was designed to serve, and its success is widely known.

A third outstanding 1938 theatre was Schine's Oswego, Oswego, N. Y. (Photo No. 19). The problem of producing an effective front at the lowest possible cost was properly solved by the use of face brick in contrasting colors laid up in a shadow producing pattern. The outer lobby (Photo No. 20) shows built-in display frames, sectional perforated rubber mats, Vermont marble wainscot, inlaid Formica pilasters, and powerful tube cove lighting.

The Lane, Staten Island, N. Y., (Photo No. 21 and No. 22) also went up that year. This house was one of the first to introduce fluorescent murals utilizing black light.

Probably the most outstanding Eberson achievement in 1938 was the erection of the Mellie Esperson building, Houston, Tex. Following the trend of most Eberson clients, the owners of the Neils Esperson building, constructed in 1925, returned to the Eberson office, and awarded the architectural contract to it in connection with further development of their Houston properties. It was a most interesting situation. Times and methods had changed, and with them styles of architecture, so that the Mellie Esperson building (Photo No. 23) as the photograph shows, adjoining the Neils Esperson building, is a perfect example of the changes during that 15-year period. Given the problem of creating a building whose design must carefully analyze cost, function, air conditioning, elevators, and other mechanical devices, the Ebersons brought into being in record time a building which is well known to be one of the first fully air conditioned office buildings, and one of the most practical even today. Plans utilized the property to the fullest extent in obtaining rentable area, and the certified cost was within an extremely low budget.

The opening of the Newsreel, Newark, N. J., (Photo No. 24) in 1938 displayed an unusual canopy with running borders, neon tubes, sparkling and flashing name sign, and plastic changeable letters for the first time in the east.



24


25


26


27

Following that, in the same year, came the opening of the Auburn, Auburn, N. Y., (Photo No. 25), which was among the first to use washable wallpaper and a modest amount of living room furniture to create an atmosphere of homelike comfort. The establishment of the neighborhood theatre was an accepted fact through 1938-39, and their number continued to grow and expand into ever widening areas.

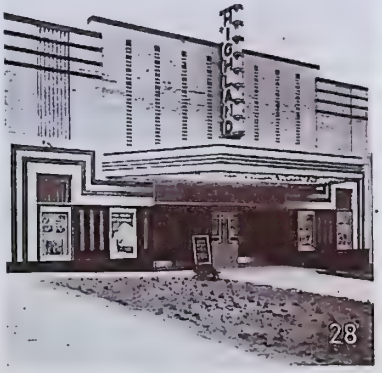
The Playhouse, Ridgefield, Conn., (Photo No. 26) built in 1939, is perhaps the most architecturally correct design for its locale of any theatre ever built. Situated in a residental community of mainly Colonial architecture, it faithfully followed that style without losing its theatrical identity.

In 1939, the Eberson Organization was commissioned by Sheikh Mustafa Al Ibrahim, the representative of King Feisal of Iraq, to design and construct the well-known exhibit building of the government of Iraq at the New York's World Fair (Photo No. 27). All the bright colors of the Orient and all the mystic motifs of Arabian culture were combined with true fidelity in Byzantine style, with a functional building that easily handled the heavy resultant traffic.

In 1940, the Eberson-designed and constructed Highland, Washington, D. C., (Photo No. 28) was a leader in the utilization of a very unusual combination of structural glass and brick.

In 1941, before the start of World War II, one of the most compact theatre designs was constructed by the Ebersons at a record low cost. This was the Cohoes, Cohoes, N. Y., (Photo No. 29). The Central, Passaic, N. J., (Photo No. 30) was another house erected in 1941 prior to the war.

Shortly after Pearl Harbor, restrictions were placed on theatre construction. During the early war period, the firm of John and Drew Eberson carried on, designing military projects such as a 1500-bed hospital in Brentwood, L. I. John Eberson then became a member of the War Production Board, while Drew Eberson served as a colonel in the Corps of Engineers. Included in most military camp programs at that time were theatres and other entertainment facilities for soldiers and sailors. Colonel Eberson supervised the construction of 30 such theatres. The photographs show two views of a theatre at Camp Shanks,


28



29


30


31


32

Orangeburg, N. J., (Photos No. 31 and No. 32).

When the war ended, another era of theatre construction was entered after the final lifting of the construction ban. In 1946, the Ebersons completed the Anacostia, Washington, D. C. (No. 33).

In 1947, the Virginia, Alexandria, Va., one of the most up-to-date houses in the south, was erected. The photograph shows the facade, from which can be noted the unusual neon trimmed upright sign executed in stainless steel and enameled iron. The front (Photo No. 34) is cast stone; the doors and box office are executed in inlaid Formica, and the marquee facing and ceiling are a combination of stainless steel and enameled iron. The foyer view (Photo No. 35) shows the positioning of the ladies' and men's lounge rooms, the candy counter, and the dramatic Formica doors. From the interior photo (Photo No. 36) can be seen the plaster valance over the stage opening. Black light is judiciously used in the proscenium, while mural panels and shovel lights facing the stage and sidewalls complete a balanced scheme. The ceiling features interesting plain ring steppings. The lobby (Photo No. 37) is dressed in rust red Vermont marble sidewalls, American black and green marble base, a ceramic tile floor, and Formica doors. Its ceiling fixtures are a combination of fluted glass and stainless steel, with no exposed lamps.

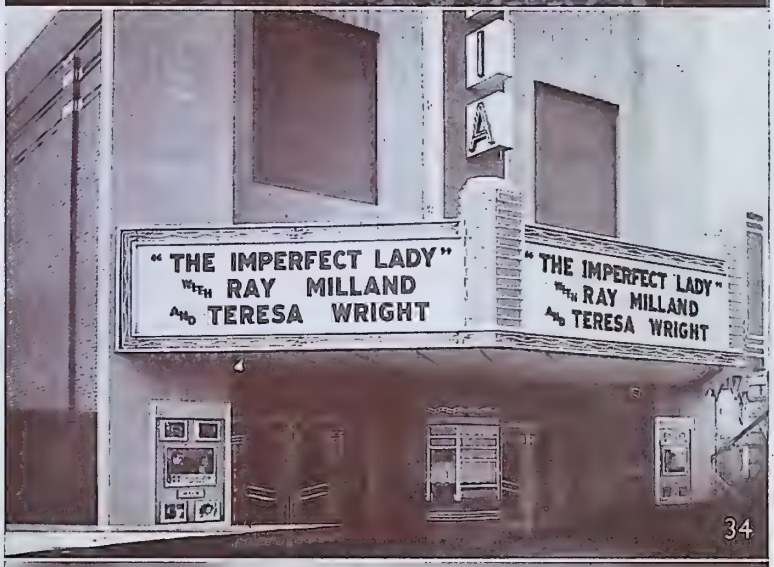
One of the latest Eberson designed theatres is the Coral, Bradbury Heights, Md., (Photo No. 38) which opened in 1948 in connection with a large shopping center. This modern theatre features an interesting full stone facade with unusual sign work. Note the terrazzo mosaic multi-colored panel depicting coral and sea life which dominates the left front. The house has a stainless steel canopy with enameled metal ceiling and Formica inlaid indoors.

The Milford, Milford, Del., (Photo No. 39) is one of the finest and largest theatres built in 1948. It was a replacement of a fire loss, and to show the patrons of the locale the faith the exhibitor had in their future, the theatre was designed to take into consideration an expansion of the population, and was the very latest in modern treatment. Particular emphasis was placed on what is perhaps the finest current installation of refreshment facilities, a full soda bar and an unusual candy display.

The Orfeon Theatre, Mexico City (Photos No. 40 and 41), is a 3200-seat house built for Operadora de Teatros, Mexico, D.F. in late 1947. This huge edifice opened its doors in February of 1948 and is considered one of the finest designs ever created by the Eberson, S.A. office. The interior displays modern lines for effective streamlining. The massive looking front is brilliantly lighted by the long marquee and neon tubed name sign. This is one of the latest structures completed by the Eberson's, who are expanding their activities with gargantuar strides.

With such a vast amount of experience and record of accomplishment the Eberson organization energetically looks forward to playing an important part in the future of theatre design—meeting the unknown problems of the future.


33



34


35


36

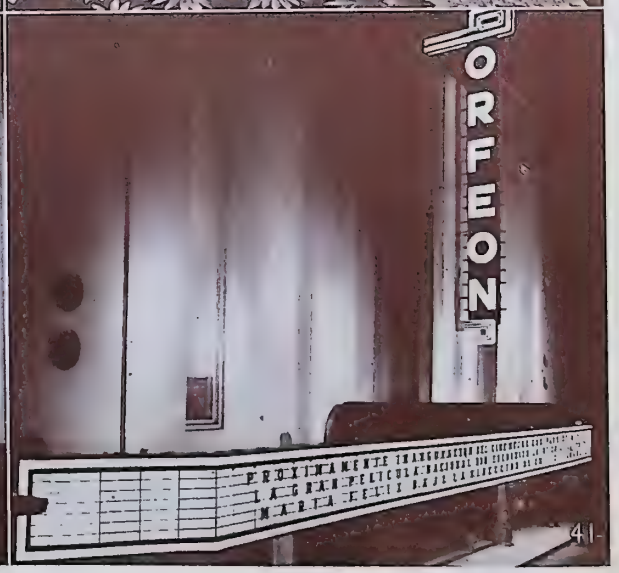

37



38


39


40



41

DESIGN

1948-49

An Interesting Canadian Theatre

Monument to the Memory of a Great Theatre Architect the ODEON-TORONTO is the Dominion's Finest

This is a review of the physical aspects of the new Odeon-Toronto which was opened to the public in September, 1948. A general description of the exterior and the interior of the theatre is followed by an examination in some detail of the interior decor. Then come data on the projection room. Less obvious elements in the theatre's make-up—air conditioning, heating, and plumbing—receive adequate attention and the study closes with a description of some interesting structural details.

Preface

The magnificent new Odeon-Toronto on which an entire repertoire of superlatives might easily be lavished has been built on modern symmetrical lines. Already a prominent landmark in the City of Toronto "rising majestically on the new skyline", the Odeon-Toronto is said to be the most important theatre in Canada. The new theatre was designed by the late Jay I. English, M.R.A.I.C., who before his tragic death in 1947 was recognized as one of the foremost authorities on cinema architecture. This building stands as a fitting monument to his highest architectural achievement.

General contractors for the construction of the building were Jackson-Lewis Company, Limited, Toronto, who combined many innovations in construction methods with traditional trade practices. Leslie H. Kemp, A.R.I.B.A., eminent English authority on modern theatre construction, succeeded Mr. English as achitect for Odeon Theatres of Canada Limited and supervised the completion of the Odeon-Toronto Theatre.

The manager of the new theatre is W. C. (Wannie) Tyers, a graduate of Humberside Collegiate, who began his career in show business as an usher at the Runnymede Theatre. Theatres in Belleville, Dunnville and St. Thomas contributed to his experience in this field; and he joined the Rank organization as manager of the Capitol Theatre in Niagara Falls.

In 1948, the Odeon-Toronto was one of the few theatres selling reserved seats for moving pictures as a regular policy. Anyone wishing to buy a seat for some special show one or several weeks in advance merely went to the courtesy desk, made the request and tendered the payment.

After an interesting advertising campaign, described elsewhere in this edition, the Odeon-Toronto opened in a blaze of glory on Thursday night, September 9, 1948, with the Western Hemisphere Premiere presentation of J. Arthur Rank's production of "Oliver Twist" playing to a capacity crowd. As one columnist put it: "The superb simplicity of its design and of all its appointments reminds you somehow of one of those jet-propelled airplanes, only with indirect lighting and music." Which is really another way of calling the Odeon-Toronto the Showplace of the Dominion.

Outside

The crown jewel of the J. Arthur Rank chain of Odeon theatres in Canada owes its attractive exterior appearance partly to its rustic buff Indiana limestone facade and partly to the pleasing balance and superb simplicity of its clear-cut design. From the top of the facade a high central pylon rises majestically in bold steps. On either side of this 126-foot tower the name "ODEON" is spelled out vertically and prominently in 10-foot blue letters which, at night, are illuminated in red neon.

THE ELEVATION of the Odeon-Toronto, shows the massive attraction board, the street entrance, and the 126-foot pylon name sign on opening night.



Nor is the pylon a mere decorative piece. A regular-sized elevator runs up and down inside it and three floors of offices fill its ample interior space. To preserve the feeling of continuity and the appearance of the front, all office windows have been placed on the north side of the pylon. The eighth floor of the pylon with a 20-foot high ceiling is not occupied at the present time but is being reserved for television.

Just above the marquee is the largest read-o-graph (Canadian theatre terminology for sign, or attraction board) in the Dominion, 45 feet long and 18 feet high. The marquee itself stretches across the front and around the flank of the theatre, projecting out twelve feet beyond the building and, for the protection of the patrons, as far as the parking lot at the rear of the theatre.

The main theatre entrance on the southwest corner of the building faces toward Yonge Street with a transparent wall of armor plate glass including the glass doors so that there is a clear view of the lobby from the street. There is another impressive entrance on Carlton Street serving the office building occupying the front part of the building.

Inside

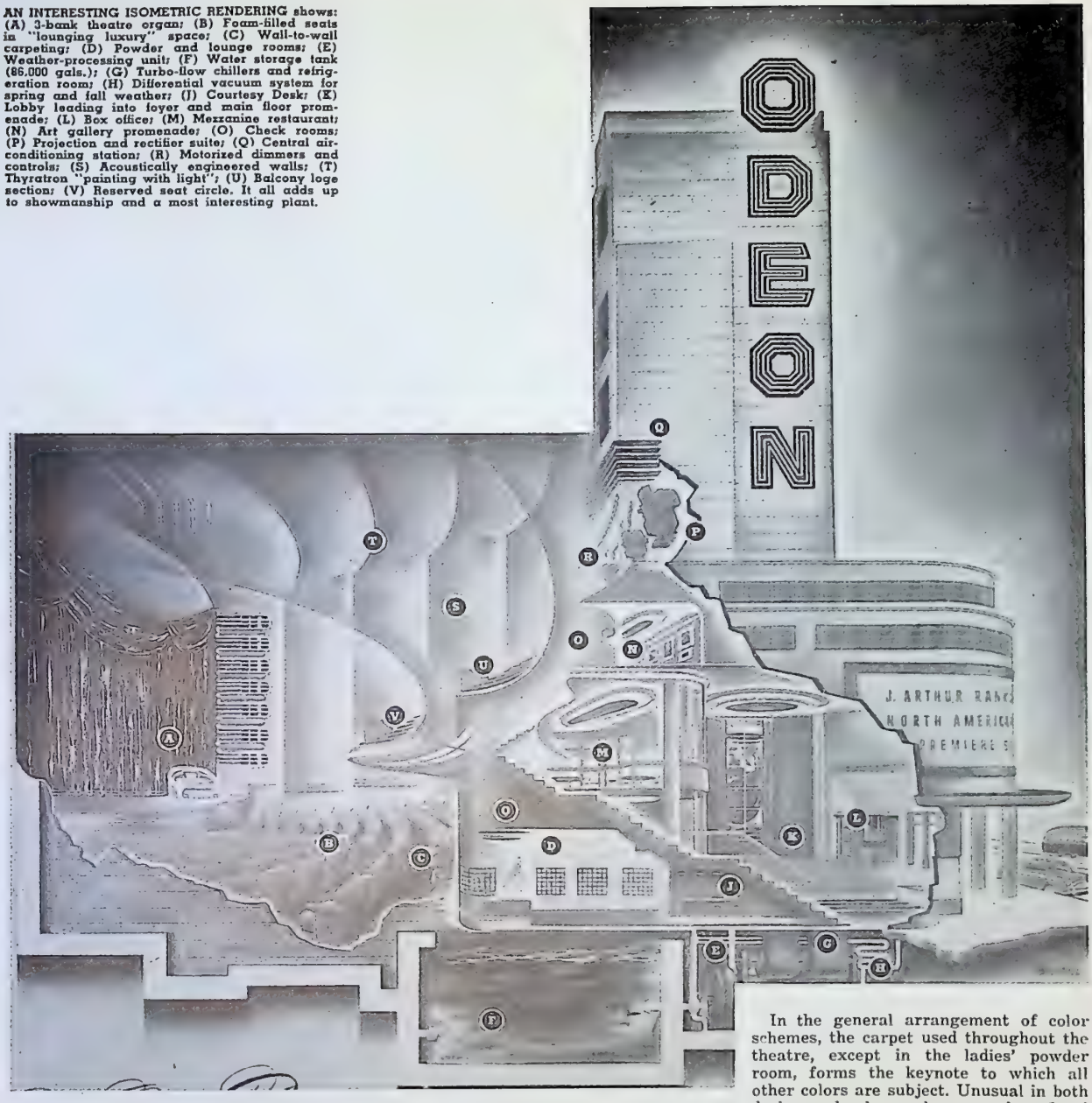
The spacious main lobby is 40 feet square and, from the terrazzo floors to the circular lighting coves in the ceiling, presents a luxurious effect. The walls are trimmed in maroon mosaic marble imported from Europe, while Flexwood is used for panelling. Pompeiian red and greyed flesh tones blend into a harmonious color scheme and the predominant atmosphere of luxury is enhanced by the strategic placing of huge inset mirrors and, at the front, plate glass.

From the main lobby a sweeping grand staircase leads to the restaurant on the mezzanine floor and the balcony foyer. On the curve of the staircase a large mural painting, "The Modern Motion Picture", is done in colors harmonizing with the surrounding color scheme.

On the mezzanine level is a restaurant, overlooking the ground floor foyer and lobby, with solid plate glass walls and doors on two sides. The prevailing color scheme of the lobby also obtains here. This restaurant has seating room for 110 persons and will serve both theatre patrons and non-patrons. On one side of this elaborate dining lounge is a section called the "soda bar."

The grand foyer on the ground floor measures 110 feet long and 24 feet wide. From this introductory space access is easily gained to: a ladies' vanity room; a gentlemen's wash room; check rooms;

AN INTERESTING ISOMETRIC RENDERING shows: (A) 3-bank theatre organ; (B) Foam-filled seats in "lounging luxury" space; (C) Wall-to-wall carpeting; (D) Powder and lounge rooms; (E) Weather-processing unit; (F) Water storage tank (86,000 gals.); (G) Turbo-flow chillers and refrigeration room; (H) Differential vacuum system for spring and fall weather; (J) Courtesy Desk; (K) Lobby leading into foyer and main floor promenade; (L) Box office; (M) Mezzanine restaurant; (N) Art gallery promenade; (O) Check rooms; (P) Projection and rectifier suite; (Q) Central air-conditioning station; (R) Motorized dimmers and controls; (S) Acoustically engineered walls; (T) Thyratron "painting with light"; (U) Balcony loge section; (V) Reserved seat circle. It all adds up to showmanship and a most interesting plant.



and confectionery stands. The promenade on the balcony floor has the same facilities as the foyer, with the addition of a gallery for art exhibitions. On the grand staircase, the main semi-circular landing has large curved windows in glass with sandblasted designs.

In the theatre proper, the auditorium is 96 feet by 130 feet, while the stage is 88 feet by 24 feet, with dressing rooms at the side. The back walls of the auditorium and the ceiling, as well as the interior faces of the side concrete walls, have been acoustically treated with three inches of Fiberglas. All theatre acoustics have been engineered to produce ideal conditions for sound.

The entire final line of seats on the orchestra floor is equipped with special hearing devices built into the wall in neat little compartments. The device can be extracted and used by the patron and replaced at the end of the show without the possible embarrassment of requesting equipment from the usher.

Design and Decor

Interior decorating of the Odeon-Toronto—executed by eminent authorities—combines richness, good taste and intelligent planning. Hard, bright glitter and noisy colors have been entirely eliminated in favor of soft eye-resting pastel shades which are set off by crystal-clear mirrors and natural finish wood.

In the general arrangement of color schemes, the carpet used throughout the theatre, except in the ladies' powder room, forms the keynote to which all other colors are subject. Unusual in both design and color—a large, modern floral pattern colored in a series of turquoise blues that shade from pale to dark full blue—this carpet is given a simple contrasting decor by a blending of opposite hues — pompeiian red and shrimp-grey flesh tones. The contrasting color combinations are effectively balanced by limed oak in natural finish for the woodwork trim and doors.

An outstanding treatment in the main lobby is the giant mural painting which follows the curve of the grand staircase from the foot of the stairs to the mezzanine and restaurant on the second floor. Colors in the mural harmonize with the surrounding color scheme. Clever use is made of mirrors in the lobby to en-



STREET ENTRANCE of the Odeon-Toronto shows the black Belgian marble pillars and entrance doors of stainless steel and glass. Below, looking across the foyer of the theatre toward the entrance doors from the lobby. The mezzanine section shown is part of the restaurant from which patrons have a clear view of the foyer. An automatic drink-vending machine is shown, in the center at the end of the mirrored wall and near the doorman's stand.



hance the mural color scheme by reflection and augmented perspective.

The painting is the result of a Canada-wide competition sponsored by Odeon Theatres of Canada Limited with the object of encouraging young Canadian artists to produce work in this medium. Depicting the modern motion picture industry, the mural was designed by Bernard McLoughlin, young Canadian painter. Over-all, it is 56 feet in length and at one end, 15 feet deep. But at the upper end of the staircase, it narrows to a depth of only slightly more than two feet. In addition, the first 20 feet of the painting curve with the turn of the staircase. In executing the mural, McLoughlin was assisted by three other Toronto artists: James Williamson, William Gee, and Frank Armitage. Taking a leaf from the book of Alfred Hitchcock, all four managed to work their own faces into the painting very subtly, disguised as cameramen and other motion picture industryites.

The main foyer carries the same color scheme as the auditorium—a soft shade of grey—with accents of deeper turquoise and clear shrimp color introduced in settees along two long walls and by two large curved settees in blue on each side of the decorative fountain at the west end. The foyer ceiling, with clear lemon yellow in the lighting coves, contrasts with the blue carpet.

Although the auditorium is large enough to accommodate 3,000 cash customers, this maximum number has been sliced to 2,321 to provide additional leg room for the comfort of Odeon-Toronto patrons. Seating has been chosen to blend with the color scheme throughout the auditorium. The chairs themselves are finished in rich gold upholstering which is set off by the green metal work and delicately sculptured gold aisle standards. This is said to be the first Canadian installation of fully Dunlopillo seats, back and arm rests—truly lounging luxury seats.

The decorative scheme of the auditorium is unique. Basically, the only color visible is soft shades of French greys in graduating pale to darker tones. However, behind overlapping "leaves" or bays closing in towards the proscenium, Thyratron Electronic illumination has been installed in twenty color circuits. When the theatre is open for business the decorative scheme is worked out in endless combinations of colored light on the grey walls and ceiling.

This "painting by lighting" (for a detailed description of the Thyratron Electronic system, see THEATRE CATALOG 1947-48 Edition pages 268-274) is the most distinctive feature of the auditorium. With three primary colors—red, blue, and green—it is possible to create any color or hue from a soft white to a deep purple. A little known fact is that by projecting the three primary colors on the surface of the cove walls in a wattage proportion of one for red, two for green, and three for blue, a soft white is obtained.

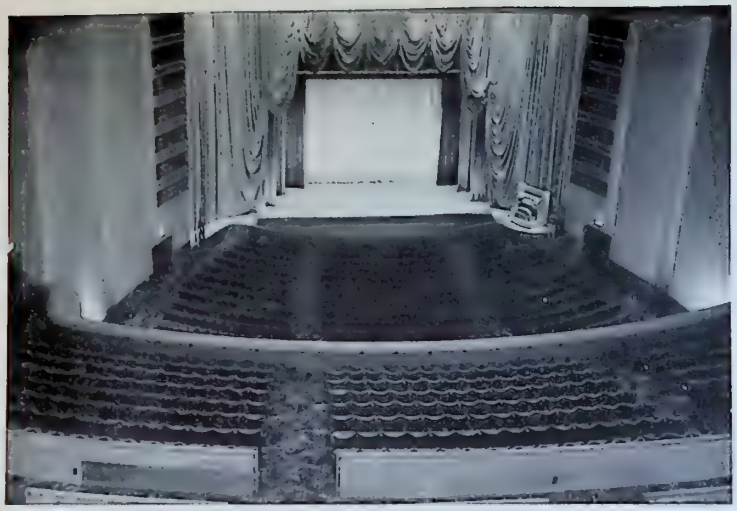
Colored reflectors are placed in each bay or lighting cove. The colors alternate up both sides of the walls and across the ceiling. By suitably varying the proportion of wattage, it is possible



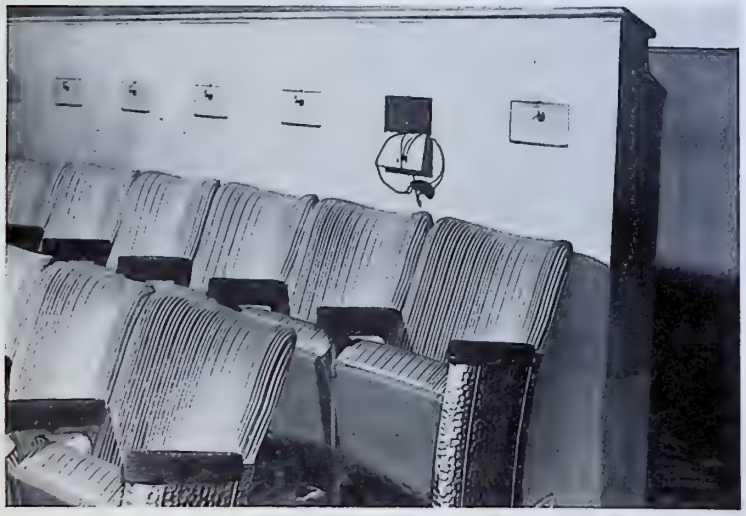


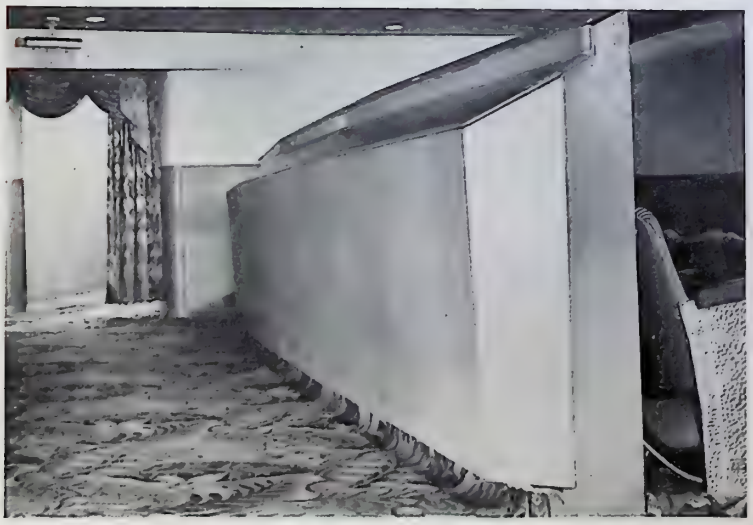


FROM THE GRAND STAIRCASE, the inner and outer lobby of the theatre is shown. A ticket counter of stainless steel is on either side of the entrance. The terrazzo floor is heated and movable display frames, as shown, are finished in natural woods. Center, a short flight of steps leads to the inner foyer, checkroom, restaurant, and smoking loges. Bottom, the inner foyer on the mezzanine floor. The art promenade is beyond the ticket-takers box but may be enjoyed by non-admission paying guests of the restaurant.



VIEW OF THE THEATRE AUDITORIUM from the rear of the reserved seat section. Smoking is permitted in all mezzanine loge seats. Center, the back row of the auditorium on the main floor and the self serving hearing aids built into the standee rail where they are available to any patron without asking an attendant. Bottom is the detail of the standee rail which is constructed with a kick-area recessed at the floor and a sloping arm rest at elbow level. By its width alone it effectively isolates standees.





to obtain an unlimited number of colors and hues either separately or simultaneously in the coves. Beautiful pastel shades and vivid colors are brought to life. By means of a special control panel actuated by Thyratron controlled reactors, the colors fade out and a new set takes their place. So gradual is the change that spectators are scarcely conscious of it.

The focal point to which the eyes are drawn, naturally, is that of stage and screen. Here the color emphasis is also important. A huge shrimp-colored contour curtain weighing 3½ tons is operated from above the stage by various motorized manipulations which permit a variety of contour openings for the stage and organ console. The curtain is lighted from above and from the sides in varying colors depending on the light filters used. Like previous designs by the late Jay I. English, the Odeon-Toronto has no proscenium arch, the contour curtain continuing around the sides to the first set of light coves.

Deep blue stage draperies provide contrast and give a feeling of depth. As the curtain opens, the turquoise tones lead the eye to the screen by a progression of border strips and legs of light in medium and deep-toned turquoise.

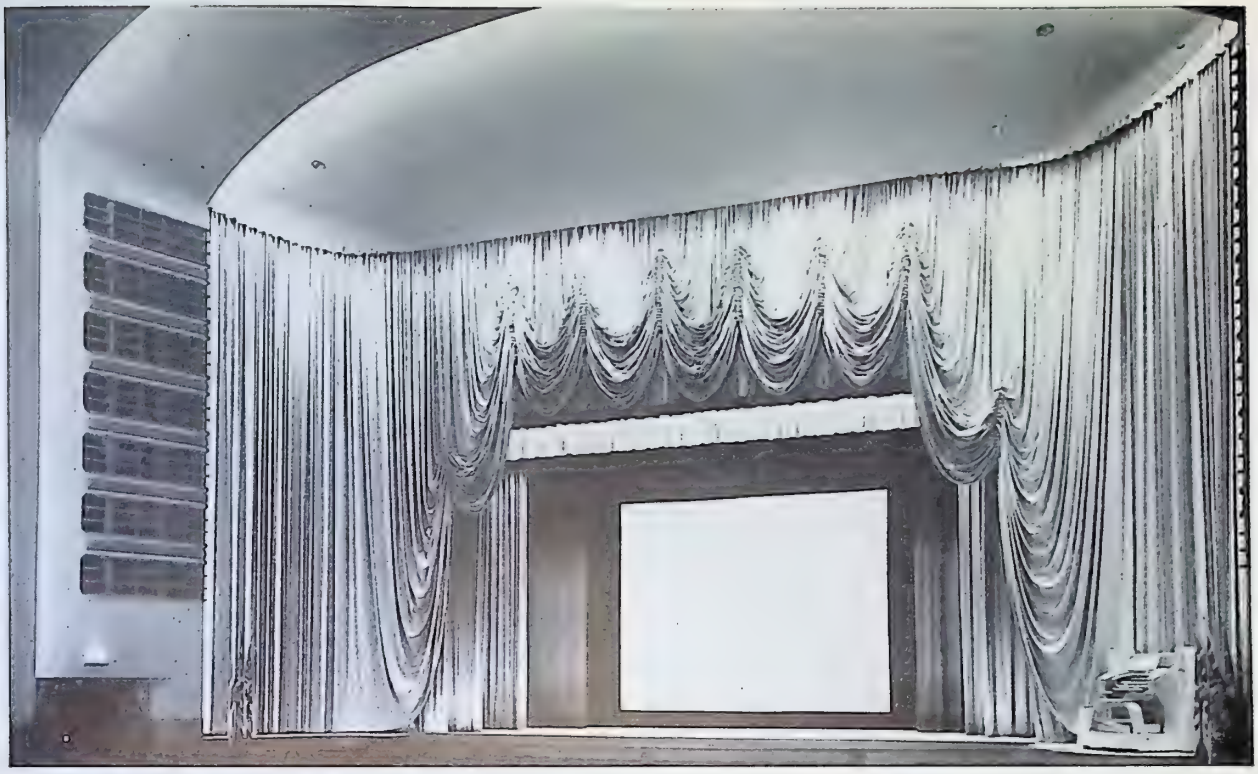
A mammoth theatre-type pipe organ with full orchestra effects has been installed on a small stage to the right of the proscenium. For recital programs and solo appearances, the organ slides out of the wall on tracks.

The tearoom and dining lounge on the second floor overlooks the main lobby and foyer, and forms a welcome addition to theatre appointments. Here, patrons and theatre parties may have tea or a complete meal before or after a performance. A call service informs the patrons by loudspeaker that the feature picture is to begin in so many minutes.

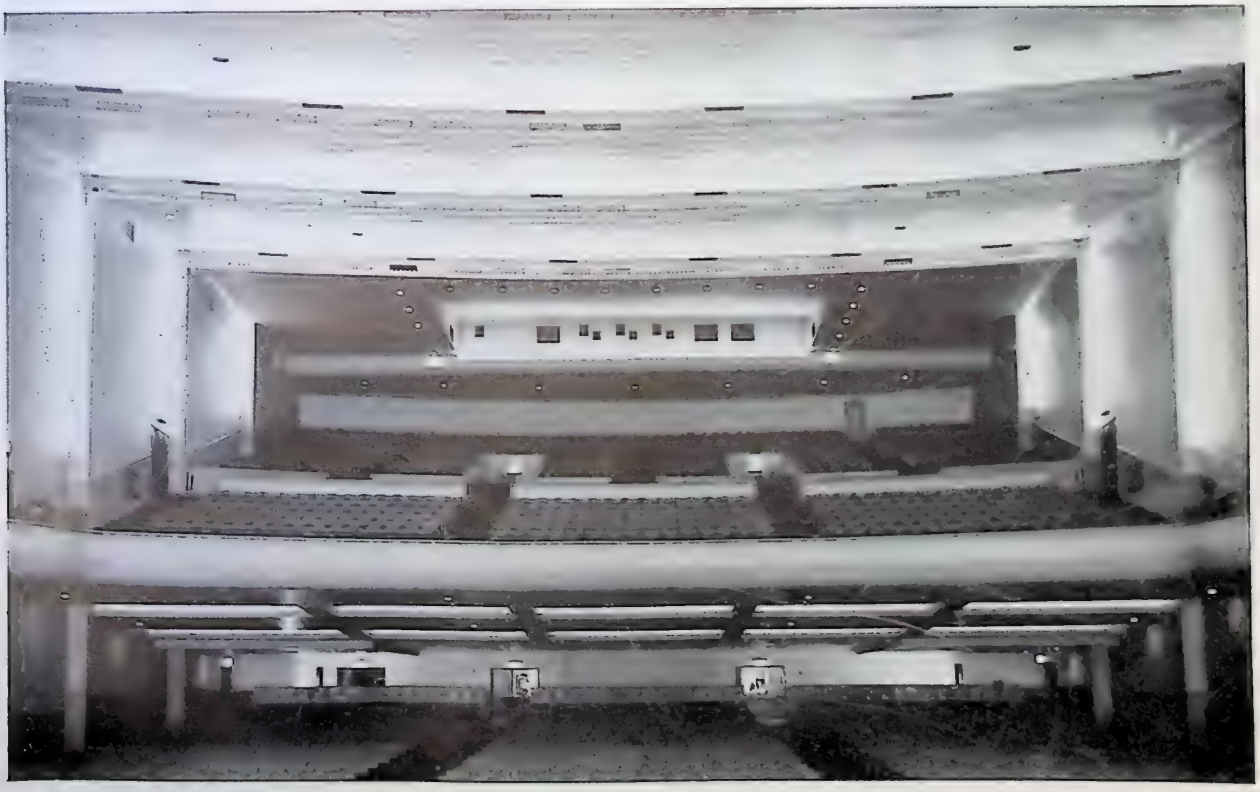
The color scheme is gay and informal, and eminently serviceable in the use of materials and equipment. Extensive use is made of Oak Flexwood, a new type of plywood design formed into modernistic patterns, which is used on the walls above the built-in seating finished in natural color. Partitions between the wall seats provide interesting decorative accents with sand-blasted designs on glass which is lighted from above. Beautiful floral planting around the balustrades further enhances this pleasant decor.

Another feature of the theatre is the Art Promenade on the balcony floor which is designed to display monthly exhibitions of painting and kindred arts. In the theatre's opening weeks, this gallery held a display of photographs done by John Steele of workmen and others who helped build the theatre. Walls of the balcony foyer and art promenade are painted a greyed flesh pink with the ceiling in turquoise blue. Special accents are inserted by the balcony doors which are lacquered a clear vermillion red.

All the furniture in the lobby, foyer, tea lounge and balcony promenade has been especially designed to echo the modern feeling throughout. In interesting contrasts to the public areas are the washrooms and powder rooms. For example, the ladies' powder room, off the



THE CONTOUR CURTAIN, screen drapes, and organ grille as seen from the auditorium. The curtain, electrically-operated, weighs 2½ tons. Below, looking from the stage to the rear of the auditorium. The thyratronic lighting system by which the auditorium is "painted by lighting" to suit the mood of the picture is clearly seen. The walls are neutral grey but can be changed in a few seconds to any desired color or color combination.



main foyer, has individually illuminated dressing tables and natural oak stools with a large pouffe in the center.

Sight and Sound

The projection suite consists of an electrical room which houses the rectifiers and switching equipment; the projection room; the rewind room; and the auxiliary room. Sound and projection equipment includes three individual machines and two complete amplifier systems, providing adequate emergency service. The G.K. 21 system equipment was supplied and installed by Gaumont-Kalee Ltd., Toronto, and designed and manufactured by G. B. Kalee Ltd., England. (This projection equipment was described in the 1947-1948 Edition of THEATRE CATALOG, pages 332-337.)

The arc lamps in the projection machines are a special type utilizing 16-inch diameter reflectors. The lenses, made by Kershaws of Leeds, England, are coated and specially color corrected, with a speed of f1.9. The purpose of the oversize reflectors is to synchronize the speed of the optical system, that is, the reflectors and lens system. Single high speed shutters are utilized by the projectors.

In place of the conventional generator system, the Odeon-Toronto uses a recent model rectifier manufactured in England by Neverlin Electric for changing the current from AC to DC. These are the mercury arc type with pinch type connectors. For each projector there is one rectifier capable of delivering 100 amps. at 90 volts.

The projection room is equipped with three individual monitor amplifiers, one for each machine. There is also a 3000-watt incandescent spotlight for playing on the stage. All wiring is concealed and the entire suite is completely fireproof. To reduce noise to a minimum, acoustical plaster has been used on the walls and ceilings; and special provision has been made to minimize light transmission loss from the projection room to the screen.

Fair Weather

The air in the theatre is conditioned by two central distribution units: one on the sixth floor and the other in the basement. The sixth floor unit handles 48,000 cfm, distributing conditioned air through a series of acoustically treated duct work systems between the roof and ceiling of the auditorium. From this duct work, air is injected into the theatre through strategically hidden diffusers of a special type that creates a wide distribution and continual circulation of air from the ceiling to the floor and back to the ceiling again. The basement unit handles 46,000 cfm and services the lower and rear part of the theatre. As in the other system, the diffusers are specially designed to create a draftless air diffusion pattern to fit the conditioned area.

Cooling of the theatre centers around a gigantic 86,000-gallon tank of Lake Ontario water under the floor of the auditorium. Measuring 54 feet long, 34 feet wide and 15 feet deep, this tank keeps its water constantly cooled to 40 degrees Fahrenheit by two 60 H.P. refrigerating machines and 14 turboflow water chillers. Heat contained in the water is absorbed by refrigerant gas and dissipated through the condensing units. Even during the hottest days in the summer, when the temperature of Lake Ontario water rises, there need be no fluctuation of the air temperature in the theatre because of the sustained flow of 40-degree water. It is pointed out by air conditioning engineers that the initial cost of the installation is increased by the large water tank; but that, by reducing the size of the required compressors, the tank saves money in reduced consumption of electric power. In the two main air conditioning systems, air containing latent heat is passed through cooling coils at approximately 500 feet a minute; and the cooling coils, with 40-degree water from the storage tank passing through them absorb this heat.

In the 900-seat balcony of the theatre, there is a special ventilating system designed to exhaust cigarette and other smoke from the air. This system is capable of exhausting 18,000 cfm of smoke-laden air when concentrations dictate this rate of purification. The system is also designed to handle automatically varying conditions that may prevail depending on the proportions of smokers and non-smokers.

Heating

Virtually every kind of heating system made for commercial buildings is represented somewhere in the Odeon-Toronto and each type has been designed to suit the peculiarities of the spaces to be heated. The elaborate air conditioning system for the auditorium and offices has its air tempered by steam-heated coils. Supplementary heat for the offices and individual rooms is supplied by finned convectors. The huge stage and some other parts of the building are heated by thermostatically controlled unit heaters. In the lobby radiant heat is used, with coils embedded in the cement floor. This heating will melt any snow carried into the lobby on patrons' feet and also keep the floor dry. A curtain of warm air is directed across the glass front and doors of the theatre entrance by a fan driven unit heater through concealed duct work, to prevent frost and condensation on the glass.

Heat for these facilities is supplied by two erect welded steel steam heating boilers with a nominal rating of 125 H.P. each and automatically fired by two industrial type stokers. Every safety precaution known to modern heating engineers has been installed on the boilers, including automatic water feeders, hand controls, and low water cut-offs. Sensitive pressure gauges not only inform engineers of the exact status of the system at all times but act as a counter check for the delicately balanced automatic instruments which are the nerves of the system.

An extremely efficient component of this steam heating system is a differential vacuum pump that literally stretches steam until 190 degrees is reached. This is said to be very economical in the spring and fall when cooler steam is required. The pneumatic controls attached to the system will anticipate outside temperature changes from half to three-quarters of an hour before the actual change thus regulating the system to coincide with temperature vacillations.

It has been estimated that there are more than four miles of pipe on the heating system alone. In addition, there are over two miles of pipe in the cooling system. Most of the piping system fans out from a huge tunnel beneath the auditorium, using the Hartford Loop, which the engineers considered the most efficient for this type of installation. All mains flow downwards in the direction of the flow of steam with a fall of not less than ½ inch in 10 feet. All pipe over 2½ inches is lap welded. No risers are visible in the building—they are all concealed in walls and floors.

Temperatures in the entire building are controlled by the pneumatic system of control for both heating and cooling, highly sensitive temperature regulators being installed at strategic points throughout the building. The office section of the building has a temperature control system made up of a 3 inch control valve, automatic selector, heat balancer, night thermostat, two day thermostats and a control panel with an

DETAIL OF THE FURNISHINGS in the powder room off the main foyer with double sided make-up mirrors.



electric time clock. This system, recently developed, permits temperatures in five floors of offices to be controlled within one degree plus or minus.

Plumbing

The theatre has nine fully equipped toilet rooms. Each fixture is fitted with air chambers to prevent water hammering in the lines. Water closets throughout the building are equipped with vacuum breakers and fitted with open front black whale-bonite seats separated by metal partitions in the various toilet rooms. Stall urinals in the men's rooms have extended lip receptors with the automatic water supply tanks concealed in walls and ceilings.

Lavatories in all washrooms are fitted with soap dispensing valves; and soap storage tanks are over each basin with pipes from the storage tank to the soap dispensing valves concealed in the walls. Showers are provided in the stage dressing rooms, the ushers' dressing room and the manager's private toilet room. Drinking fountains in the theatre are provided with chromium plated angle stream jets with self-closing oscillating handles and concealed volume regulators.

Water comes into the building through a 6 inch main. A 4 inch stack and 3 inch vent pipe run from the top floor to the basement, with 4 inch Y and 3 inch T connections. The cast iron drain system is trapped, vented and provided with a house sanitary trap. Rain water is drained through a 9 inch vitrified clay pipe connected to the roof leaders and catch basins in the yard.

Floor drains in the basement floor, elevator pit and tunnels empty into a sump from which the water is pumped by an automatic sump pump into the drainage system. A special pump in the basement acts as a stand-by in case of fire in the building. Should the pressure of the water in the city mains drop below a predetermined level during a fire, the pump automatically starts and provides 50 pounds pressure as far as the top floor of the building.

Water requirements of the plumbing system are large. Water supplied to the air conditioning system alone is 600 gallons per minute. And domestic hot water for the building is supplied from a 469 gallon black steel storage tank built for 100 pounds working pressure and specially painted on the inside. This tank has a special copper "U" bend steam coil built into it which will heat 150 U. S. gallons of water per hour from 50 degrees to 170 degrees with steam at 5 pounds pressure. The tank is complete with hot water thermometer and circulator with immersion type aquastat.

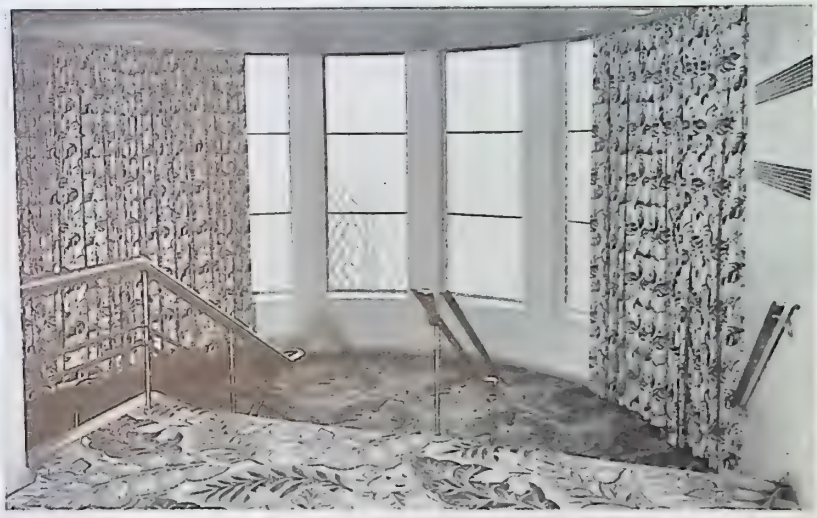
Structural Background

Before construction work was started on the new theatre, several buildings on the site were demolished. When these were cleared away, the engineers made a number of test holes and, as a result of these tests, it was decided to set the footings down 25 feet on dry hard clay.

The framework of the superstructure is entirely structural steel. Altogether, nearly 1,000 tons of structural steel were used in this building, while the average-sized theatre built in Canada is said to use approximately 150 tons.

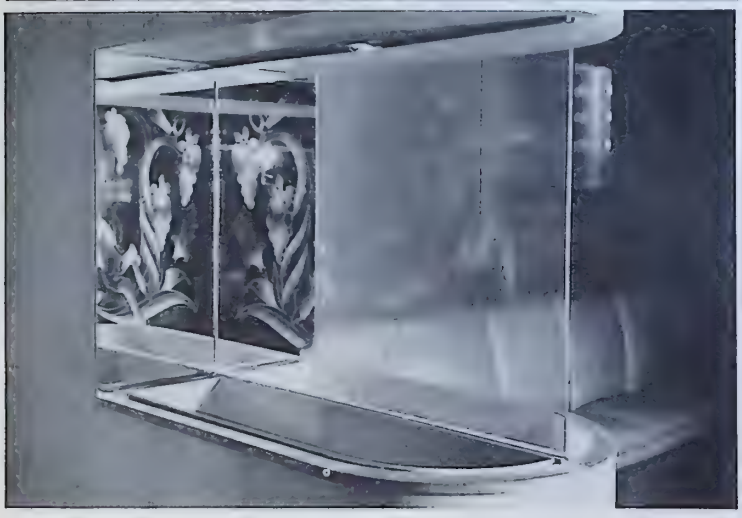


A SECTION OF THE GRAND STAIRCASE which leads from the lobby to the restaurant, art promenade, and mezzanine loges. In the lower right of the photo is the courtesy desk. A 53-foot curved mural, "The Modern Motion Picture Industry", can be seen in the background. Center, wireglass windows are required by law but are sandblasted decoratively. Bottom is the entrance to the art promenade where a constant exhibition of the works of Canadian artists draws continuous attention.









THE THEATRE RESTAURANT is shown at the top. Overlooking the foyer, it stretches around in an L-shape. Center, a close-up of the modern etched glass partitions which separate the alcoves in the restaurant for greater privacy. Bottom can be seen the soda and serving bar arrangement as well as the cashier's desk in the rear of the restaurant. The front tables overlook the foyer and lobby. This theatre combines many new designs for the ultimate in patron comfort.



Erection of the steel work involved some interesting engineering problems. One was the fulcrum supporting the cantilever balcony trusses which spans 94 feet clear and weighs 60 tons. Another was the intricate design of the cantilever action with outrigger truss supporting the end of the balcony. The main roof truss is 90 feet long, weighs 20 tons and was raised in one piece by a heavy derrick. This is the truss from which the projection room is supported. The stage required heavy grid framing with rear wall columns almost 90 feet high. Ceiling structural steel work follows an intricate pattern since the plaster follows the contour of the steel work.

The side walls and rear wall of the building were originally intended to be brick and tile. However, these plans were changed to avoid labor and material delays. On the suggestion of the Jackson-Lewis Company Limited, these walls were made of poured concrete 8 inches in thickness. Forms for the concrete were lined with masonite on the exterior face of the walls to give a smooth finish to the surface. The interior surface of the outer concrete walls was faced with Ten-Test saturated with damp-proofing material on the face adjoining the interior concrete walls. The insulating board is attached to a wood strip incorporated in the concrete pour.

Another outstanding engineering feat is the proscenium arch spanning the stage. It is a combination structural steel and concrete girder, with the structural steel truss being designed to carry only the dead weight of the concrete encasing it. The combination of steel truss and concrete forms a composite girder which carries the weight of the masonry wall above, including the grid, and the portion of the roof resting on this wall. The girder is 62 feet across and contains 100 tons of cement which was poured in 10 hours.

The roof deck over the auditorium is pre-cast Aerocrete. Over this is a 20-year bonded built-up felt and gravel roof. The built-up roof consists of a moisture barrier over which two ½-inch layers of insulating board are mopped in with hot pitch. The insulating boards are separated by cut-offs, 20 feet square, to localize any leaks that might occur. Over the insulation are five plies of roofing felt, each ply mopped with hot pitch. Final application is a covering of gravel to protect the roof from the actinic rays of the sun.

Conclusion

The Odeon-Toronto, in its advertising, boasts that "a committee of experts" has chosen it as "one of the five most distinguished theatres in the world". In many ways it seems to merit such distinction. For those who knew Jay I. English, or, as the Editors of THEATRE CATALOG, were the beneficiaries of his advice, sincere criticism and learned submissions of data, down through the years, there is real pleasure in knowing that his crowning design achievement has produced a theatre that is so signally honored.

An Interesting Latin-American Theatre

Not Limited by High Domestic Costs the Lush TACNA is Notable for Its Idea Value and Materials Used

The first of April—traditionally a day given over to all manner of buffoonery including chocolate-covered soap and sham-covered information — occasionally rises to shining heights with an event of the first magnitude overshadowing innocuous shenanigans. April 1, 1948, was such a date. In Lima, Peru, a first-night audience was treated to a spectacle off the beaten track of everyday life —the opening and dedication of the TACNA, the first theatre to be constructed and operated under the aegis of Paramount International Theatre Corporation.

Said to be the finest theatre in all of Latin America, the TACNA, located on expansive Tacna Boulevard, has been given full benefit of all the latest advances in the art of building. Engineered and built by Florez and Costa of Lima, from the architectural plans of Schlanger, Hoffberg, Reisner and Urbann, of New York, the structure is of reinforced concrete with aluminum sheet roofing supported by steel trusses. The walls over most of their interior area are plastered; but in the front facia of the balcony and around the rear-wall portion of the theatre, acoustical rock-wool blankets covered with perforated transits are utilized.

On the outside, too, full advantage has been taken of modern construction materials. The electric sign which silhouettes the name TACNA against an open glass backdrop at day, and beams the legend out in full neon bloom at night defies the elements in its garb of stainless steel. This non-corrodible, quais-noble metal also forms an integral part of the marquee signs. These have flasher borders, equipped with Adler letters and flood the sidewalk with both neon and fluorescent lighting. Gold and white glass mosaic work intensifying the brilliance of parallel rows of neon tubing irradiate the soffit of the marquee, and for similar enhancement of architectural beauty, some of the predominating free-standing reinforced concrete columns of the interior are also covered with this glass mosaic. The entrance doors give the illusion of continuity from the outside into the lobby of the TACNA with an unbroken sweep, an illusion created for the most part by the use of herculite glass, a material new in Latin American construction.

The TACNA is actually an innovation in theatre building below the equator. Located on one of the principal thoroughfares of the Peruvian capital, the theatre is the first in Peru to enjoy the luxury of modern air-conditioning. The theatre, which is part of a complex ten-story building where apartments, offices and de luxe shops intermingle, is of fireproof construction and all its furnishings which were flammable are thoroughly fire-proofed.

The coming of the TACNA made an intriguing preview story in the 1947-1948 THEATRE CATALOG; and a detailed description of design aspects, materials used, and color schemata combined with informative architects' renderings to infuse a dream theatre with the stuff that facts are made of. Perhaps the term "Dream theatre" is in the nature of an exaggeration since all the plans were complete and only the activity of building was lacking when the original announcement appeared. Since the information given at that time was brimming with details, the editors feel justified in omitting a large portion of the description of the existing theatre since a repetition would serve no useful purpose. Readers wishing to obtain the complete story are requested to refer to page 8 of the 1947-1948 (Sixth Annual Edition) of THEATRE CATALOG.

One of the more interesting facts about the TACNA is the sociological innovation it inaugurated. For years South American balcony customers have been in a social doghouse. Entering the theatre by doors set apart from the auditorium and mezzanine entrance, these economy-minded cinema enthusiasts climb stairs to find wooden benches, concrete steppings, or wooden chairs provided for their sitting pleasure.

(Editor's Note: The same conditions of separate entrance and hard wooden benches have prevailed at Philadelphia's famed Academy of Music for a good many years. However, in the City of Brotherly Love, no stigma attends those who patiently ascend (by shank's mare) to the stratospheric heights of the Amphitheatre (Peanut Heaven). In fact, some of the town's most worthy citizens and some of music's best friends hear

A MAXIMUM OF GLASS was used in order to achieve openness and a maximum of light. The gold and white mosiac covered marquee is an extension of the mezzanine floor cantilevered over the sidewalk. Along the length of the marquee is a continuous planting box with all-year flowers and shrubs, to both charm the passer-by and improve the view from the large mezzanine and balcony.





LOOKING FROM THE INNER FOYER through the tempered glass doors, the light transition from the under marquee area's parallel lines of neon tubing to the more subdued down lights can be noted. Coral terrazzo with white metal dividing stripes, in like manner, give way to luxurious carpeting, and the gold and white mosaic ceiling and trim blend into soft painted areas.



THE FIRST FLOOR LOUNGE AND MAIN STAIRWAY are carpeted in an abstract pattern in green, grey, black and white. The structural and decorative columns are covered with gold and red mosaic. Sunburst satin screen and contour curtains enclose the screen and front curved contour of the screen platform, to the virtual elimination of the conventional proscenium arch. The auditorium seats 1945.



the glorious Philadelphia Orchestra from this lofty perch.)

Paramount International follows the American lead in refusing to snub balcony customers, since in the United States the theory is that the middle and lower classes form the backbone of theatre business and probably also help to keep it stiff. Once this idea is accepted as valid there follows no course but to give the balconyites a warm welcome instead of the cold shoulder.

Accordingly, the balcony of the TACNA has been equipped with fully upholstered seats, given a well-furnished lounge, and had its floor carpeted. The aisles leading to the balcony have also been fully carpeted. As a crowning gesture, the new theatre makes available to balcony patrons for the first time in recorded South American theatrical history, beautifully tiled, completely equipped modern rest rooms.

Here is an interesting example of a sociological reform based on a sound economic motive. The theory implicit in civilized treatment of the balcony world is simply this—that a theatre built to attract only the better classes can never be as successful a business venture as a theatre whose comfort, safety, and entertainment are bestowed equally upon the entire clientele, independently of the admission price.

Enjoyment of the show from the balcony has been given an added boost from an optical illusion—the TACNA is so constructed that even at balcony height the motion picture screen seems to float at eye level. For good measure, this eye level illusion prevails in the mezzanine as well as in the auditorium.

In its theatre application, lighting is as modern as the materials of construction. The theatre lighting system is especially designed with the new Frank Adam Electric Company dimmer. In the main ceiling a series of high-hat and recessed fixtures cause light to shine directly down on the audience. The theatre interior also derives added illumination from a series of neon lighting tubes

A SEDATE CANDY COUNTER with recessed ceiling lighting and framed in vertical stripes of white oak in a matte finish, is advantageously placed just back of the door-man's position.



encircling the auditorium at the mezzanine floor level.

The TACNA is designed to insure maximum economy in the use of floor space in the auditorium, mezzanine, and balcony. Yet comfort is hardly neglected. For show enjoyment—which most frequently depends upon sitting ease—the theatre is equipped with American Seating Company body-form chairs fully upholstered throughout. As originally announced in the 1947-1948 THEATRE CATALOG, the seating capacity is 1945. This includes 883 seats on the main floor, 405 seats in the mezzanine, and 657 seats in the balcony. For statisticians these facts may be interesting: The number 657, representing the seating capacity of the balcony is almost midway between the seating capacity of the auditorium and that of the balcony; with a total seating capacity of 1945, the TACNA can draw on an estimated theatre public of about 250,000 according to a late estimate of Lima's population.

Although the TACNA was constructed by Paramount International Theatres Corporation, and is operated under that company's supervision, the actual owner of the sumptuous cinema palace is Inmobiliaria San Martin, S. A., an organization of prominent Lima business men. Manuel Gaboldoni is President, and J. Bayly Gallagher is Director General. Present manager of the theatre is Alfonso Gaillour. For additional credits—and their mention is well justified by the splendid results achieved in building the TACNA—the reader is referred to well documented list on pages 11 and 12 of the 1947-1948 THEATRE CATALOG.



SOUTH AMERICAN DIGNITARIES headed by the president of Peru and his wife, attended the April 1 gala premier of the Tacna. Ray Milland, Paramount star, was on hand to represent Hollywood, and the entire affair was one that will be long remembered by the elite of the Peruvian capital.

It seems somehow appropriate that Lima, Peru, should set the pace in contemporary theatre building south of the equator. In fact, it was nearly four hundred years ago that the first institution of higher learning in the Western Hemisphere opened its doors to students in Peru. This was the University of San Marcos, founded in May, 1551, eighty-five years before Harvard began its career. So, historically, there is an overwhelming precedent for pioneering in the finer things of life.

FROM THE FIRST FLOOR LOUNGE a free standing stair leads to the mezzanine through an open well that is the dominant feature of both floors. Bronze railings, with wood paneling covering the open side and black marble on the closed, give this a rich and modern effect.





IN THIS NIGHT VIEW, the dramatic nature of the interior lighting and the manner in which it vitalizes the entire front can be noted. The white satin drape with sunburst pattern can be traversed across the window if desired. Either method has effective attraction powers.



LOOKING FROM THE STAGE the walls are covered with transite acoustical panels in neutral tones, with a dado of white oak arranged in vertical battens. The ceiling is green combed plaster and the soffits of the upper levels are painted a rich wine. These colors highlight the auditorium.



THIS PATRON'S EYE VIEW of the second balcony foyer looking toward the grand window gives some indication of the luxurious appointments which are carried even into this lower admissioned area. Below is one view of the mezzanine foyer showing columns and seating.



THE MEZZANINE FOYER with the satin curtain of the grand window in a closed position. At left is a small candy bar that could easily be used for the service of soft drinks. Below is the rear of the main floor foyer under the main stair. The ceiling spotlights provide restful illumination.





The Never-Swept Theatre of Mediapolis

Ingenious and Effective Cleaning Installation Simplifies Housekeeping and Freshens Atmosphere

I. R. Glesne, co-owner of Iowa's first Quonset theatre, the "Swan" in Mediapolis (Theatre Catalog 1946-47, pages 165-166) found an effective answer to one of the basic problems of theatre maintenance in a well-engineered combination of water and gravity. Utilizing floor drains in a focal low spot to catch and carry away water, Glesne put the old tried and true flushing action of street sprinklers to work on sloping floors. Result—an exceptionally simple and effective cleaning system which rinses dirt down drains; eliminates laborious and time-consuming sweeping.

Design Cycle

The operation is the acme of simplicity. Essentially, Glesne's cycle consists of turning on the water and flooding his double-sloped floor from perforated pipes at both ends of the auditorium.

The two floor-level pipe-lines follow the contours of the stage and foyer limits continuously except for side-aisle breaks. Corrosion-resistant, the pipes are made from ¾" copper tubing, soldered at the ends and drilled with holes at two inch distances.

When the operating valve is turned on, water flows into the pipe and out of the perforations in an overlapping pattern that insures complete floor coverage. At the junction of the two slopes —towards the front of the auditorium— drains in the central and the two side areas carry away the water with its trapped soil, leaving the floor in all its pristine spotlessness after the flood is over. Candy wrappers, popcorn boxes, bits of paper, etc., are caught by the metal strainers on the drains which constitute the only area of the theatre from which refuse must be manually removed.

Installation Method

Installation of this "pipe-line cleaner" is said to be accomplished easily in any new construction. The pipes, of course, should be put in place before the floor is laid.

The floor is made of 6" reinforced concrete, specially surfaced with a truscon quartz product "trelled" into the topping cement. This special conditioning imparts an ultra-hard wear-resistant quality to the heavily punished floor surface.

To add to the effectiveness of Glesne's unique cleaning system and to give the floor sufficient resistance to moisture, the surface is waxed, utilizing a special red-dressing compound which renders it impervious to water without creating a potentially dangerous slippery condition. The waxing, in fact, has the highly beneficial effect of promoting rapid drying after each flushing operation and thus preventing harmful dampness.

Island Carpets

The two carpeted side aisles, running the length of the hall and dividing it into three distinct cleaning areas, stay high and dry—untouched and unaffected by the daily wetting-downs. Here again, an otherwise troublesome obstacle in the cleaning program has been neatly licked by old faithful—the law of gravity.

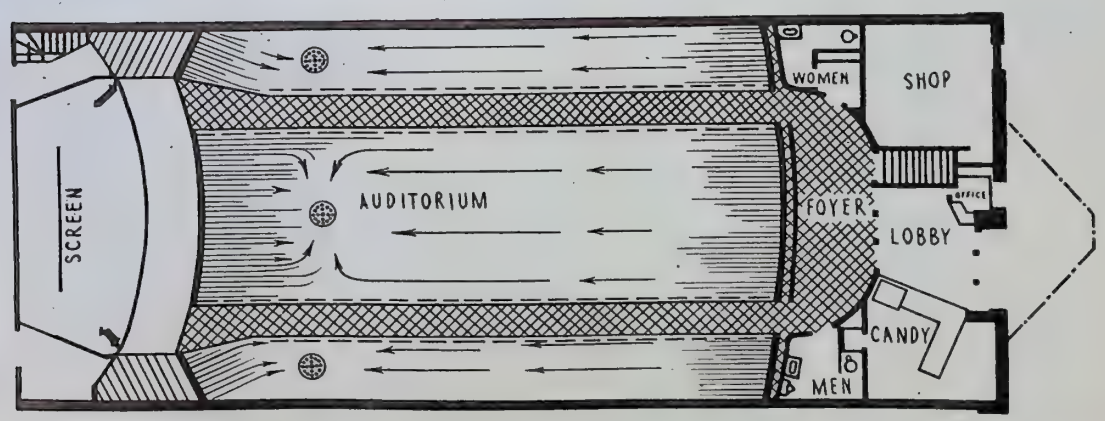
Rising one inch above the adjacent concrete floor, the aisles are carpeted the entire width of their level surface. However, at the carpet boundaries on each side the aisle plateaus slant gradually downward at an angle to join the floor proper. In the cleaning operation the volume of water released from the pipes is valve-controlled for safe level operation—below the 1" aisle height.

This cleaning method, in constant use at Mr. Glesne's Swan Theatre, does a thorough job of keeping the floor tidy and giving the theatre a fresh, clean smell—an important intangible factor in successful theatre operation.

Conclusion

It saves time, money and labor and facilitates efficient housekeeping. Glesne's idea—adaptable to both Quonset and conventional theatre construction, offers many interesting possibilities to all new theatre builders who may be temporarily stymied by out-of-this-world maintenance costs or a difficult labor situation.

THE DRAWING BELOW has resulted from an artist's conception of the manner in which the cleaning flow would operate, as reasoned from the data supplied by Mr. Glesne and superimposed over an actual floor plan of the theatre. From it can be noted the manner in which the carpet "islands" prevent dampness or soiling from reaching these expensive furnishings. As a matter of deduction, a carpet installation handled in this way should have a longer than usual life, for the cleaning flow will most certainly remove all loose grit resulting from the normal "dusting" of a concrete floor, in a better manner than the often inadequate push broom. The difficult, and often slipshod method of cleaning around seat standards would be eliminated.



Practical Notes on Theatre Wiring

Fundamentals That Apply to the Usual Electrical Equipment and Lines for Power and Lighting

This article presents information on electrical circuits for power and lighting requirements in the modern motion picture theatre. General lighting and power systems, emergency equipment, sign lighting, projection room light and power, and miscellaneous circuits and control panels are discussed, and preferred installations described. Recommendations, based on experience, are given for wiring and control installations found to be most satisfactory from a functional standpoint.

Electric Wiring

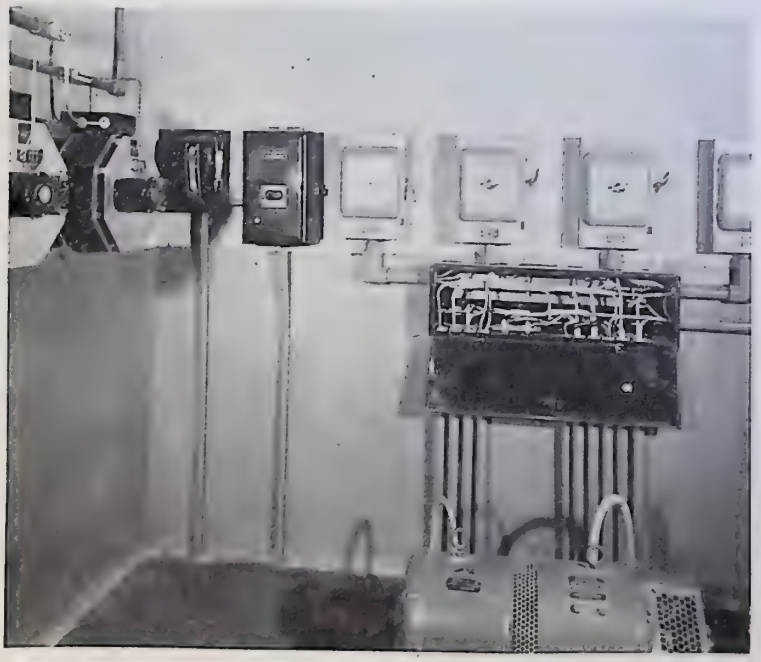
The electric lighting and power requirements of the motion picture theatre will require at least four separate distribution centers or panels, namely, the general lighting panel, with a supplementary ten- or twelve-circuit panel in the projection room, a sign lighting panel controlling exterior signs, a power panel for controlling the motors required for the mechanical equipment, and an emergency lighting panel controlling all emergency lighting.

General Lighting Panel

This panel should be located in or adjacent to the manager's office, and should control all the circuits for the lighting in the auditorium, foyers, lobbies, toilets, etc., and also the stage lighting. However, auxiliary controls for the auditorium and stage should be located in the projection booth to enable these lights to be properly controlled in conjunction with the projection of the picture. In some localities union regulations require these lights to be controlled by stage-hands, in which case, these controls will be located on stage and operated in response to buzzer signals from the booth.

In other instances where more extensive stage lighting such as footlights, borderlights, stage pockets, and so forth, is required to light vaudeville or other stage attractions, a regular stage switch board will be installed with dimmer controls, etc., and all stage and house lighting will be controlled from this board. In such cases only the lighting circuits for the front of the house, that is, the lobbies, foyers, retiring rooms, and so forth, would be controlled from the general lighting panel.

THE ARRAY OF CONTROL SWITCHES AND DIMMERS in an average projection room represents one of the heaviest theatre concentrations of electrical equipment. Here the normal a.c. power lines are converted through generators or rectifiers into d.c. for the carbon arc. Here also will be found all necessary wiring for the projection, sound and any special effect equipment plus remote controls for the curtain machine and main auditorium lights. An orderly arrangement promotes efficiency.



This panel will also have one section which will control all emergency and exit lighting required.

Most codes require that the emergency panel be fed from two different power sources or substations and be equipped with an automatic throwover switch which will operate on failure of the regular power supply. This will furnish enough current to the exit lights, and to lights in the auditorium on the stairs, in the lobbies, foyers, and exterior exit courts to prevent panic in these areas.

Where a second outside source of electrical energy is not available it will be necessary to provide auxiliary equipment in the theatre to energize the exit and emergency lighting circuits.

If such equipment is required, an automatic generating plant powered by a gasoline motor which will also operate on illuminating gas if available, will prove to be the most satisfactory over a period of years. Emergency sets operated by water power are also available and satisfactory for smaller theatres. Storage batteries with trickle chargers for either 32 volts or 120 volts are also available. If a 32-volt set is used it will require separate wiring to all emergency lighting and different lamps from those in general use on the 120-volt circuits throughout the house.

Sign Lighting Panel

The sign panel, which will control all the exterior display lighting, should also be located in or near the manager's office. This panel should have separate controls for the vertical sign, changeable letter panel lighting, and at least three controls for the marquee soffit. In addition to the above mentioned controls provision should be made on the panel for a flood or spot light circuit, one for flashing borders, and at least two spares. The load controlled by this panel will be from 15 to 25 kw. depending on the size and design of the exterior lighting. The branch circuits from this panel should be extended to a weather proof accessible pull box in the front wall of the theatre just above the marquee roof. The branch circuit wiring to this pull box should be left sufficiently long for the sign contractor to make proper connections to the sign wiring.

Projection Room Light and Power

The projection room a.c. requirements will be a branch feeder from the main lighting panel to a ten- or twelve-circuit panel in the projection room wall, and branch feeders from the main power panel to location of motor generator sets for supplying d.c. current to the projection machine arcs, and in some cases to spotlights or effect machines. Provision

Practical Notes on Theatre Wiring

Fundamentals That Apply to the Usual Electrical Equipment and Lines for Power and Lighting

This article presents information on electrical circuits for power and lighting requirements in the modern motion picture theatre. General lighting and power systems, emergency equipment, sign lighting, projection room light and power, and miscellaneous circuits and control panels are discussed, and preferred installations described. Recommendations, based on experience, are given for wiring and control installations found to be most satisfactory from a functional standpoint.

Electric Wiring

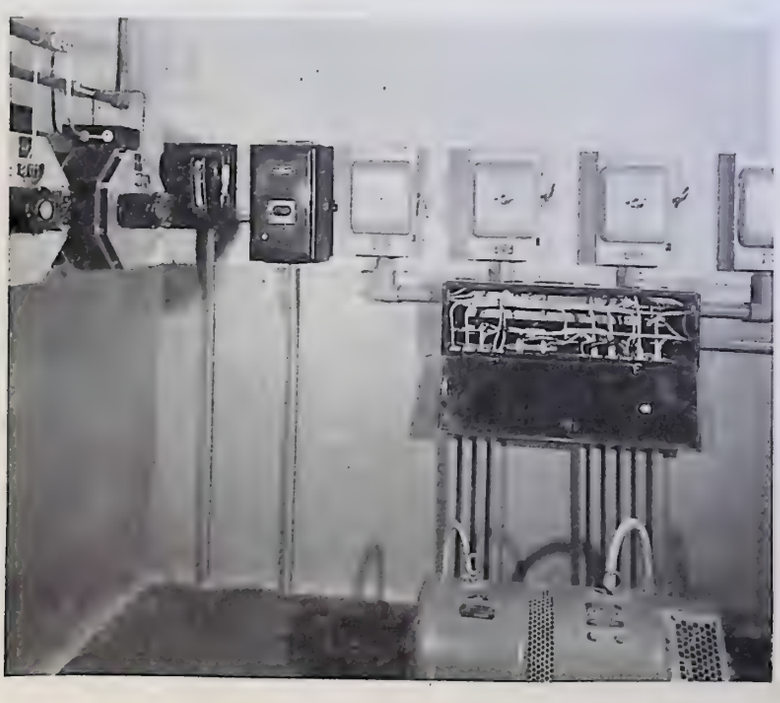
The electric lighting and power requirements of the motion picture theatre will require at least four separate distribution centers or panels, namely, the general lighting panel, with a supplementary ten- or twelve-circuit panel in the projection room, a sign lighting panel controlling exterior signs, a power panel for controlling the motors required for the mechanical equipment, and an emergency lighting panel controlling all emergency lighting.

General Lighting Panel

This panel should be located in or adjacent to the manager's office, and should control all the circuits for the lighting in the auditorium, foyers, lobbies, toilets, etc., and also the stage lighting. However, auxiliary controls for the auditorium and stage should be located in the projection booth to enable these lights to be properly controlled in conjunction with the projection of the picture. In some localities union regulations require these lights to be controlled by stage-hands, in which case, these controls will be located on stage and operated in response to buzzer signals from the booth.

In other instances where more extensive stage lighting such as footlights, borderlights, stage pockets, and so forth, is required to light vaudeville or other stage attractions, a regular stage switch board will be installed with dimmer controls, etc., and all stage and house lighting will be controlled from this board. In such cases only the lighting circuits for the front of the house, that is, the lobbies, foyers, retiring rooms, and so forth, would be controlled from the general lighting panel.

THE ARRAY OF CONTROL SWITCHES AND DIMMERS in an average projection room represents one of the heaviest theatre concentrations of electrical equipment. Here the normal a.c. power lines are converted through generators or rectifiers into d.c. for the carbon arc. Here also will be found all necessary wiring for the projection, sound and any special effect equipment plus remote controls for the curtain machine and main auditorium lights. An orderly arrangement promotes efficiency.



This panel will also have one section which will control all emergency and exit lighting required.

Most codes require that the emergency panel be fed from two different power sources or substations and be equipped with an automatic throwover switch which will operate on failure of the regular power supply. This will furnish enough current to the exit lights, and to lights in the auditorium on the stairs, in the lobbies, foyers, and exterior exit courts to prevent panic in these areas.

Where a second outside source of electrical energy is not available it will be necessary to provide auxiliary equipment in the theatre to energize the exit and emergency lighting circuits.

If such equipment is required, an automatic generating plant powered by a gasoline motor which will also operate on illuminating gas if available, will prove to be the most satisfactory over a period of years. Emergency sets operated by water power are also available and satisfactory for smaller theatres. Storage batteries with trickle chargers for either 32 volts or 120 volts are also available. If a 32-volt set is used it will require separate wiring to all emergency lighting and different lamps from those in general use on the 120-volt circuits throughout the house.

Sign Lighting Panel

The sign panel, which will control all the exterior display lighting, should also be located in or near the manager's office. This panel should have separate controls for the vertical sign, changeable letter panel lighting, and at least three controls for the marquee soffit. In addition to the above mentioned controls provision should be made on the panel for a flood or spot light circuit, one for flashing borders, and at least two spares. The load controlled by this panel will be from 15 to 25 kw. depending on the size and design of the exterior lighting. The branch circuits from this panel should be extended to a weather proof accessible pull box in the front wall of the theatre just above the marquee roof. The branch circuit wiring to this pull box should be left sufficiently long for the sign contractor to make proper connections to the sign wiring.

Projection Room Light and Power

The projection room a.c. requirements will be a branch feeder from the main lighting panel to a ten- or twelve-circuit panel in the projection room wall, and branch feeders from the main power panel to location of motor generator sets for supplying d.c. current to the projection machine arcs, and in some cases to spotlights or effect machines. Provision

ROOF

PROJ. ROOM LEVEL

ORCHESTRA FLOOR

BASEMENT

To 120/208 1.3φ 4 WIRE SERVICE

METER

3-300 MCM IN 2" - 3½"

DO

C.T CABT

3" - 12 - 1½"
3" - 14 - 1½"
DO
3" - 12 - 1½"

5HP 1HP 1½HP 5HP

EVAPORATIVE COND.

TO AUD. CLG LIGHTS.

DIMMERS

12-15A CIRCUITS

PROJ. BOOTH A.C. PANEL

BOOTH FAN MTR

DO

POWER PANEL

2-#6 - 1¼"
3-#4 - 1½"
3-#4 - 1½"

15 HP. FAN 15 HP. M.G. SETS

NOTE. INSTALL CONDUIT & COPPER FOR 15 HP M.G SETS FOR FUTURE REQUIREMENTS

4-#2-1"

1-#6 2-#10 1-#8 GRD. 1"

4-#2-1½"

N.P. BOX ABOVE MARQUEE LEAVE 12" TAILS FOR SPLICING

DIST SECTION
1 150 AMP LIGHT
1 175 " POWER
1-400 " "

LIGHTING SECTION
4-50 AMP. AUD CLG
1- " " PROJ RM
12-15 " GEN'L LTG
4-15 " SPARES

EMERGENCY SECTION
2-15 AMP EM. LIGHTS
2-25 " BOOTH FANS
1-25 " EM. SET
1-25 " SPARE

SIGN SECTION
1-50 AMP NAME
2-50 " ATTRACTION
3-25 " SOFFIT
1 25 " SPARE

MAIN LIGHTING PANEL
(THERMAL CIRCUIT BREAKED TYPE)

AUTOMATIC THRO-OVER SWITCH

EMERGENCY GENERATOR

REF. COMP. 30A
" " "
COND. PUMP 3HP
" " 3HP
OIL BURNER 3HP
AIR COMP. 30A

3-#2/0 - 2"
3-#2/0 - 2"
3-#4 - 1½"
3-#14 - 1½"
3-#14 - 1½"
3-#14 - 1½"

DISCONNECT SWITCHES

¼HP ½HP 1HP 1HP 30AMP 30AMP

DIAGRAMMATIC LAYOUT OF ELECTRICAL PANELS AND FEEDERS FOR A TYPICAL MOTION PICTURE THEATRE - SEATING CAPACITY 1250-1500 SEATS.

NOTE. SKETCH ASSUMES A 4 WIRE, 3 PHASE, 120/208 VOLT, 60 CYCLE SERVICE.

should be made for installation of two generator sets or two rectifiers, or one of each. The extra equipment is for standby protection in case of failure of the first generator or rectifier. All motors should be equipped with externally operated line disconnect switches ahead of the motor starter or controller.

Provide conduit and wiring for d.c. current from the generator through necessary grid type rheostats to a d.c. panel set flush in the projection booth wall. This panel should be equipped with four 2-pole, double throw, front knife-connected switches with N.E.C. fuse connections in each throw. Two of these switches feed the projection machines, one the spot or flood lamp, and one will be a spare.

The size of the motors for the generator sets will vary with the size of the theatre and the equipment used. The average load will require from 7½ to 10 hp. for each generator. However, it will be good engineering to provide conduit and wiring capacity for two 15 hp. motors, so that no change will be necessary to take care of the contemplated higher amperage arcs which will be required for the new type of film which is now starting to come through.

The type and manufacturer of projection booth equipment should be determined and a diagrammatic layout of the necessary conduit and wiring for both projection and sound equipment obtained, which can be adapted to the particular projection room layout. Provision should be made for conduit and wiring for control switches at each machine to operate the curtain machine, also wall receptacles for trouble lights and soldering iron, clock, and for automatic rewind equipment. Wiring diagrams for change-over equipment and necessary foot switches should be obtained from the equipment manufacturer.

In some localities it is a code requirement to install in the projection booth an automatic emergency control switch, connected with the automatic shutter control for projection booth ports, ventilation shutters, projection booth exhaust fan, the main supply and exhaust fans, and the auditorium lighting. This switch should be operated both by melting of a fusible link and manually.

Power Panel

The main power panel should be located in the machine room and close to the largest power load. This panel will control the current for motors for the ventilation fans, the air conditioning equipment, ejector and sump pumps, oil burner, and so forth. The main feeder supplying this panel will usually feed from the main power service through a separate power meter. This setup however will be determined by the service company's rates, which should be investigated and the layout should conform to the recommendations which will provide for the lowest charge for light and power service in the particular locality.

Telephones

Outside telephone service should be provided in the boxoffice with an extension to the manager's office. Outside service should also be provided for pay stations, in the main lounge or the foyer.

Buzzers

Conduit wiring and transformers should be provided for a system of buzzers, required for efficient operation, and should include one from the boxoffice to manager's office, one from doorman's station to foyer, and one from inside of standee rail to booth for regulating the volume of sound. Also one from the manager's office to doorman, and one with return call from projection booth to stage.

Inter-Communicating Telephones

Provision should be made for a complete intercommunicating telephone system with stations in the manager's office, boxoffice, projection room, stage, and in some cases in the machine room.

Curtain Control

Three control switches will be furnished with the curtain control machine. Two of these should be located in the projection room front wall adjacent to each observation port, and one at a convenient location on the stage.

Miscellaneous Small Motor Wiring

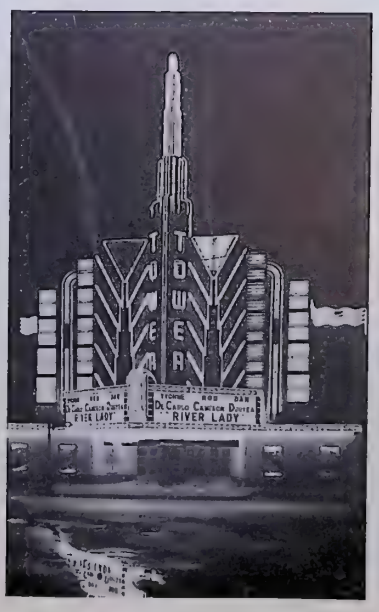
Make provision for conduit and wiring for drinking water cooler, projection booth exhaust fans (on emergency circuit) and other small equipment motors.

Exit Lighting

Pertinent codes should be checked for requirements for exit lighting. In general these will consist of exit signs over each regular and emergency exit, also at stairs, and so forth, and an exterior outlet over each emergency exit. Requirements as to size and color of lettering in exit signs differ but eight inch red letters reading "exit" is the standard requirement. Some codes permit 6-inch letters, and some require the letters to be green instead of red. In some cases it is the requirement that each exit sign be numbered and these numbers correspond with an exit diagram furnished to each patron.

The exterior exit lights should have weather-proof sockets with a strong wire guard, to prevent stealing and breaking of the lamp.

IN MOST THEATRES the marquee and front lighting represent a major power load that looms large in the k.w. consumption reflected by the power company's bill. Numerous separate controls should be provided for management economy.



Aisle Lights and Step Lights

Aisle lights should be located on end seat standards every fourth row, staggered for aisles with seating on both sides, and every second row for side aisles. Seat standards have provision for these lights and the fixture and fittings will be furnished by the seat manufacturer. Conduit fittings or floor boxes in the floor located to clear the standard and the seat when it is raised should be provided. The connection between the condulet or floor box should be with BX. Floor boxes should be water-proof.

Step lights should be provided at every change in level of the floor, not otherwise sufficiently lighted. These sometimes occur at the last rows of seats where steps are required from the aisles to the seat bank levels. Step lights will also be required in balcony aisles, vomitories, and so forth.

General Lighting Recommendations

The tendency of most designs is to over-emphasize the lighting in the auditorium proper, with coves, large side wall brackets, special effects, and so forth, which, on account of audience distraction and also on account of current and maintenance cost are seldom used after the first few weeks. Therefore it is good planning to provide for only necessary lighting properly to light the auditorium between performances, emergency and exit lighting, a certain amount of lighting which is used during the showing of the picture, and lighting for the stage setting.

If the general lighting is controlled through dimmers, the same wire, fixtures, and so forth, can be used for both the full lighting and the picture lighting, and the intensity most flattering to the picture can be used by proper setting of the dimmer. Dimmers which do not use current through resistance are the type for this purpose. This method is very flexible and especially appreciated for technicolor presentations. All conduit and wiring, panel boards, and so forth, should comply with the requirements of the National Electric Code and the local codes, and provision should be made in panel and feeder sizes for additional future loads, which may be necessitated by change of outdoor signs, addition of display lighting, etc.

Convenience Outlets

Convenience outlets should be located in all areas for incidental lamps, pin spots in the lobbies, and not over 50 feet apart for connection for vacuum cleaners. Some floor outlets in orchestra, mezzanine, and balcony just off the aisles will be required for this purpose.

The Quonset Arch Has Earned Consideration

Dozens Now Built and More Under Construction Are Best Proof of Economy and Functional Adaptability

The prefabricated type of theatre has become a subject for wide discussion, and some of the statements made in published articles appear to be more or less "off hand," showing lack of full knowledge of the subject by both architects and exhibitors. For instance, a contemporary publication quoted some architects as dismissing the Quonset type of construction by stating. "Quonsets cost more than carefully planned theatres."

Basic Considerations

This factory-fabricated building is, in the writer's opinion, particularly adapted in the construction of certain types of theatres in certain locations, but is sometimes handicapped by the term "hut," which was given it during the war. The fact is that this building, which so adequately fulfilled its mission during the war because it could be erected quickly, and used for housing, storage, and many other purposes, is a building in every sense of the word as contrasted to the publicized term "hut," which impresses the layman, when he hears the word, that something temporary, and in most cases, war surplus, is being referred to and foisted on an unsuspecting public. Such is far from fact. The Quonset has been re-designed as a permanent structure to meet the nation's post-war civilian needs.

The Quonset building, which is being recommended for use in erection of theatres up to about 650 seats, is a specially designed construction for this particular use, and the manufacturers will not knowingly allow one of their buildings to be sold for a theatre unless it is of the type especially designed for such use.

Furthermore, the mistaken idea some prospective owners have, that this type of construction can be economically constructed on one location, and later dismantled and erected on another piece of property, is erroneous in all but the most simple cases. The especially designed Quonset does, however, provide a cheap, efficient, enclosure for the auditorium portion of the theatre, so far as the roof and walls are concerned, but permanent floors, foundations, and retaining walls will, in most cases, be required in the same manner as in standard construction.

In order to produce a good looking and inviting facade, the front of this type of theatre, including the marquee, boxoffice, entrance lobby, projection booth, etc., should be a well designed ensemble using the same materials and type of construction as used in the usual type of theatre.

The factory-fabricated portion above referred to, requires, on account of the loads imposed on the structure for thermal and acoustical treatment, plaster, duct work, drapes and decorations, much stronger design and construction than the standard buildings which are to be used only for storage and other purposes. The manufacturers have taken these items, together with provision for wind and snow loading, into consideration in the design of their product for use in theatre construction. In general, this additional structural strength is procured by doubling the number of ribs, thus retaining economic advantage of mass-production of building parts. These deviations from standard are in the province of any qualified architect or engineer. Such professional advice is advisable to insure that the Quonset construction is used to best advantage.

Codes and Restrictions

Although, at present, some state and city building codes do not recognize this type of construction for theatres, they do not necessarily prohibit it. They do, in most cases, call for masonry walls, a requirement which obviously cannot be met in this type of construction. In such cases, it is necessary to get special rulings from the authorities having jurisdiction before permits will be granted.

First introduced as a serious, lower-cost building method in the 1946-47 Edition of THEATRE CATALOG the prefabricated Quonset arch has earned its place as a method to be thoughtfully considered whenever theatres of up to 600 are being planned.

On the other hand, several states have already approved this type of construction outside of certain fire limits. It is the opinion of most competent authorities that this type of construction is not applicable in congested areas, but is adaptable to smaller communities and neighborhood theatres.

Thermal Insulation

Since the outer covering of the Quonset is corrugated steel, it is necessary to provide for thermal insulation of this outside skin to prevent condensation, and also to prevent the escape of heat in the winter time, and exclude it in the summer. There are, at present, several products on the market which will solve this problem satisfactorily. This, again, calls for technical advice which takes into consideration local factors of temperature and humidity.

Acoustical Treatment

On account of the semi-circular shape of the Quonset, the acoustical properties must be studied carefully, and treatment applied to obtain best benefits from curvature of the walls and ceiling without producing a "dead" house. It is possible, with certain materials, to combine the thermal insulation and the acoustical treatment, using only one material, and thereby making a substantial saving in the cost, but sacrificing something in the way of interior appearance of the auditorium. The requirements for acoustical treatment in this type of auditorium must be determined by careful and intelligent analysis the same as for a standard type theatre.

Stadium Type

Due to the fact that the 40′ 0″ Quonset, when set on foundation walls approximately 5′ 0″ above grade, produces sufficient height at the rear without additional cost so far as the enclosure is concerned, it will be found economical to design a stadium type when the greatest possible number of seats are desired, using the space under the stadium for lobby, retiring rooms, etc. The framing and support for the stadium or for a mezzanine will necessarily have to be entirely separate from the Quonset construction so far as any actual support for the same is concerned.

General Layout

With a standard 40′ 0″ Quonset, it is possible to lay out a seating plan with two aisles, a center bank of 11 seats, and two side banks with four seats each, giving a total of 19 seats per row, and since variations in the length of the seating area can be made by adding or subtracting sections in multiples of 4′ 0″, it is possible to adapt this type of construction to any size property with a minimum width of approximately 52′ 0″. This width allows for a 5′ 0″ court on each side. The most economical unit by which the length can be varied would be 8′ 0″, which will increase or decrease the seating capacity by exactly three rows, each 32 inches back to back.

If sufficient property is available, an additional 20′ 0″ section can be included at the stage end of the auditorium, in which the heating, ventilating, and air conditioning equipment can economically be installed, thereby not requiring expensive excavation for these utilities.

Special Details

On account of the circular shape of this construction, it will be found necessary to provide for special reinforcement in the foundation walls on the two longer sides of the auditorium, as the structural characteristics of the building produce approximately 200 pounds of thrust per lineal foot of wall.

It will also be found necessary to provide for special flashing where the prefabricated portion rests on the foundation wall to take care of the water condition, and to provide concrete gutters in the exit court construction to carry

the water away from the foundations and the exit courts.

Comparative Costs

At present day prices, the costs of a standard type theatre, with masonry walls, steel roof trusses, and general fireproof construction, will be between $175 and $210 per seat, varying with the location, and the comparative size of lobbies, foyers, etc. and also the type of interior treatment and finish. The above price includes the cost of heating, ventilation, and complete year-around air conditioning, but does not include decorative painting, display signs, stage drapes, sound and projection equipment, seats, or other items classed as equipment. Figuring on the same basis, the type of construction described in this article should reduce the per-seat price from $50 to $75 or even more in some cases.

Saving in Construction Time

Since the Quonset buildings are standard, and are available on short notice from dealers located through the country, considerable time can be saved over that required for steel fabrication of the usual type of construction, and since the sections required to completely enclose the auditorium of a 650-seat theatre can be erected, after the foundations are completed, in approximately seven working days, it is estimated that the time required to complete the construction of a theatre of this type is about 60 working days, under normal conditions.

Future Developments

Several manufacturers now have, and others are already working on, complete prefabricated fronts for this type of theatre, which will include the boxoffice, entrance doors, signs, marquee, etc. Prefabricated projection booths are also being designed and patented. These items, in conjunction with the factory-fabricated enclosure for the building itself, will come as close as possible to producing a prefabricated theatre building which can be erected in the least amount of time and at a minimum cost.

Summary and a Prediction

The statement at the beginning of this article bears repeating at this time, viz., we believe that this type of construction can be recommended on account of cost, ease of construction, and present availability, but we also definitely know that it does not now, nor will not in the future, entirely supplant the standard type of theatre construction. It does, however, lend itself to certain sizes and locations, and can be, with intelligent design and planning, made to fill a need for theatre construction in these instances.

At press time it has been learned that there is an experiment taking place in a Southern city, where by the use of special extension roof trusses a normal 40′ 0″ Quonset arch is being expanded to 50′ 0″ and resulting in a theatre of over 1000 seats. If this proves successful, we predict that Quonset arch use in the theatre field will receive accelerated interest.

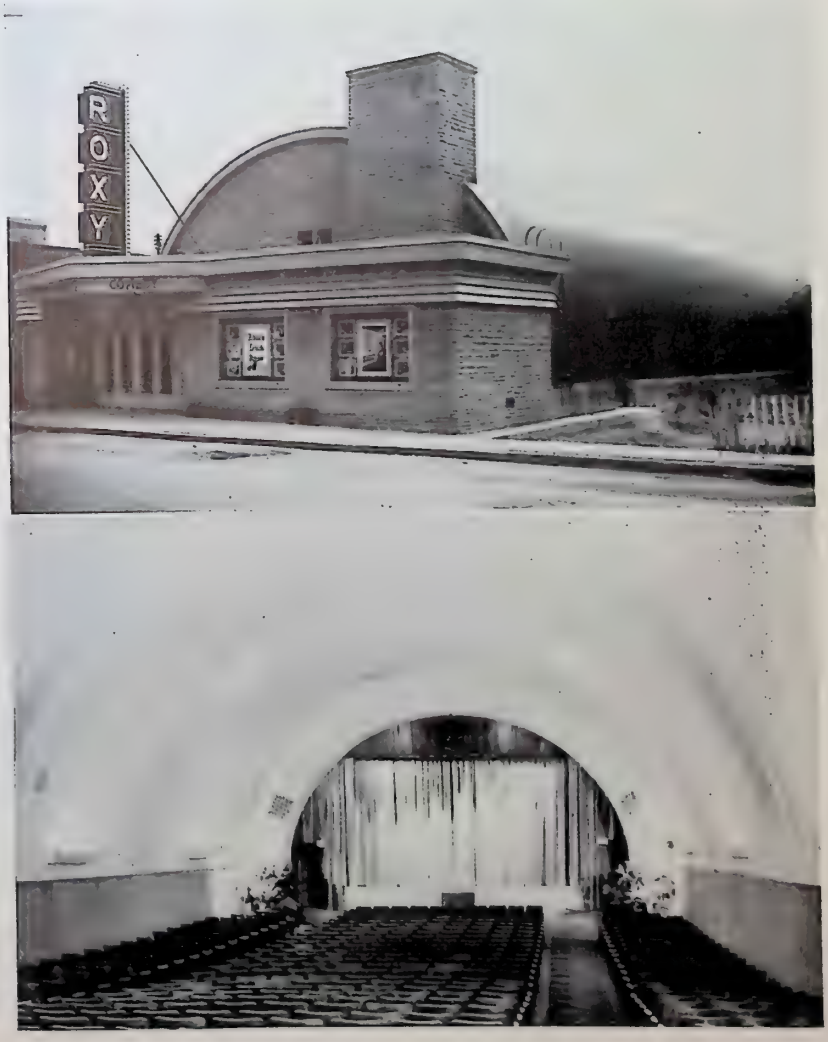
A Pictorial Study of – THE ROXY, BRAMPTON, ONTARIO, CANADA

First theatre of the quonset-type to be constructed in the province of Ontario, the 618 seat Roxy, opened on April 13, 1948, just 18 weeks after building activity commenced and in the face of extreme winter weather.

Designed by Molesworth, Secord and Savage, architects of Toronto, for National Theatre Services, Ltd., the lot size is 50x150 feet and the size of the quonset building is 40 feet wide, 132 feet long and 20 feet high. The foundation wall was extended up four feet to give an average 24 foot ceiling inside the auditorium. 15 feet of the steel building was used for part of the front and lobby section; with an additional 12 foot front section built of reinforced concrete slabs with steel beams and a facing of Georgetown Sand Stone, completing the structure.

The entire steel building is insulated against sub-zero weather and extreme heat. A unit heating and cooling system of hot and cold water coils supplies a 3-minute airchange for the auditorium, with individual radiation in all other spaces. The heating and cooling system pipes are laid under the aisles, with the only excavation at the front of the building under the ladies' room for the heating system. The floor is three and one-half inch concrete slab road mesh, reinforced by a one and one-half inch smooth finish, and a four inch cinder base well rolled and tamped.

Color scheme of the lobby and foyer ceiling, and carried into the walls and ceiling of the auditorium is a sky blue with a slightly darker blue on the bands of the ceiling. A dado of knotty pine around the auditorium carries through the sidewall treatment of the spacious lounge; and no standee area is provided.



CHIMNEY for the heating installation is utilized as part of the exterior design, and, in addition to the local sandstone, the trim and marquee is of wood except for the changeable letter area. In the auditorium view can be noted the grilles on either side of the proscenium and in the face of the stage apron, for unit heating installation.



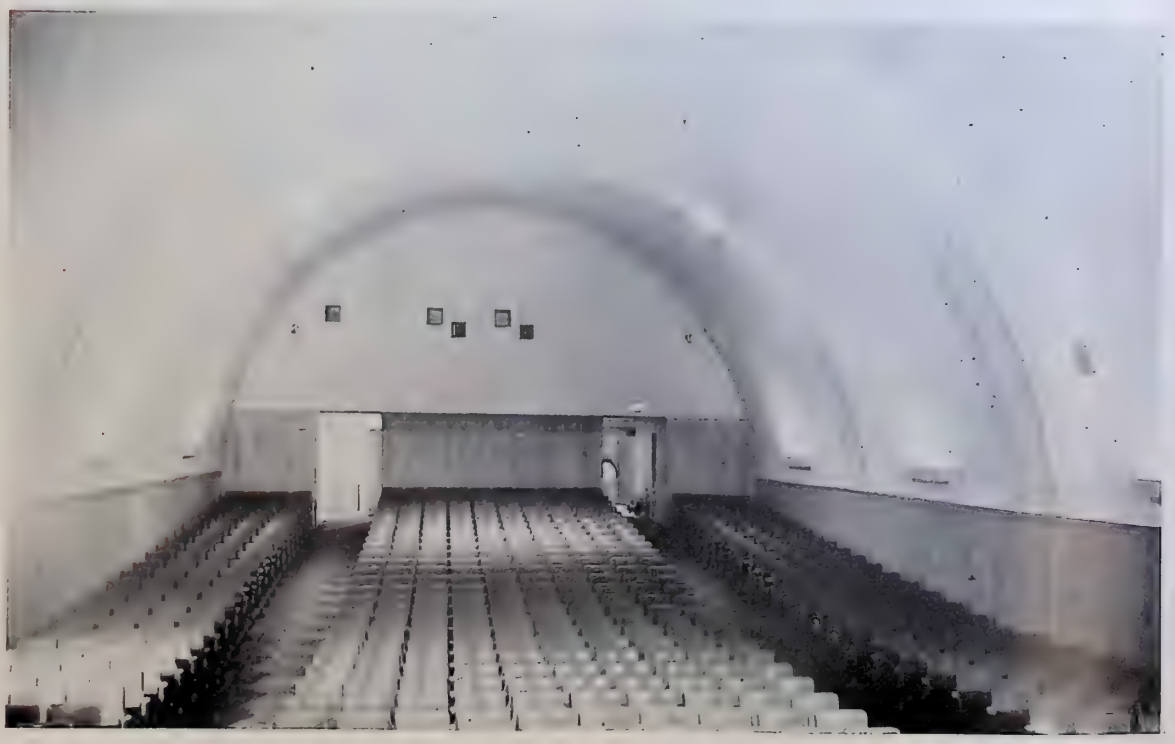
ABOVE, the entrance from the street is at the extreme right and to the auditorium at the extreme left. The candy bar seen at the right is adjacent to the ticket window so that both both can be handled by one girl except at rush hours. The decorative highlight of the fover is the wallpaper mural. Below, simple dignity is the dominant and effective theme of the auditorium.

Imported carpets, terra cotta with a floral design, cover the lounge, standee and aisle areas. Foam rubber-cushioned chairs spaced 34 inches back-to-back and covered in red plastic leatherette; and red velour stage curtains and draperies complete the color scheme.

In the foyer a large mural in scenic wallpaper, recessed and lighted, features one wall. Depicting "The Harvest", the tones of brown, buff and white were chosen to harmonize with the knotty pine walls. A small, but well placed candy and refreshment counter is so arranged that the cashier can service it except at rush periods. Layout of the foyer, heated by direct radiation from the heating plant below, is designed for one-man operation.

The projection room, equipped with Century "Model C" Projectors, Northern Electric No. 105 Sound, Motiograph 1 K-W Projection Lamps and Strong Rectifiers by Dominson Sound Equipments, Ltd. of Toronto, is constructed on separate foundations but under the quonset steel roof. The ladder which can be seen at the right side of the front elevation serves as a fire escape for the projectionist. A door on the right side of the building provides an entrance to the furnace room.

The auditorium has been designed with a reverse slope floor, and good acoustics are provided through the use of an acoustic plaster treatment directly to the interior of the quonset ribs. The rear wall has been covered with acoustic tiles and painted sky blue to match the auditorium color tone. Work lights have been installed in the ceiling arch.



A Pictorial Study of – THE ILAN, FERNANDINA, FLORIDA

The town of Fernandina, Florida, is on an island that is sixteen miles long and only one and one-half miles wide with 6000 inhabitants, separated from the mainland by the East Coast's famous inland waterway. Claimed to be the second oldest community in North America, for it was settled by the same Spanish explorers who settled St. Augustine, it is the county seat although most of the people in the county who do not reside on the island are more accessible to the larger and better equipped Jacksonville.

To serve this potential, C. E. Beach, owner of several theatres in that area and with over 27 years of industry experience, had plans drawn during the War for an 800 seat conventional theatre of bricks and mortar, but was turned down three times in his request for Government permission to build. Fearing opposition, he decided on a quonset arch building which was permitted and the Ilan Theatre is the result. With 613 seats, staggered and spaced 34 inches back-to-back, in the main auditorium; and an additional 190 seats, spaced 32 inches back-to-back, in the segregated balcony; his four additional seats in the minute private screening or cry room, brings the total capacity to 807. Mr. Beach estimates that his total building cost was $73,000.00; but that on the equipment he really "shot the works" to the tune of $40,000.00. The Ilan opened July 27, 1948, with gala ceremonies.

Situated on a basic lot 100 by 200 feet, with an additional 100x100 foot parking area added, the all-steel quonset portion of the structure is 40x150 feet. A separate air conditioning room that is 13x24 feet was added at the rear.

The front was designed and fabricated by Ben B. Poblocki and Sons Company, and consists of mottled tan porcelain enamel below the canopy, with a stainless steel canopy facia, name and attraction sign. Above the canopy the facia was covered with Spanish stucco broken by a smooth band of ivory 30 inches high. It is a house policy that all exterior advertising relates to the current attraction only, so the two 40x60 inch poster frames are more than adequate. In balance with the poster frames, is a glass block panel to the right of the entrance, framing an exterior boxoffice window and a concession window through which sales can be made to the outside. This concession window also serves as the special boxoffice for colored patrons which is essential in that area.

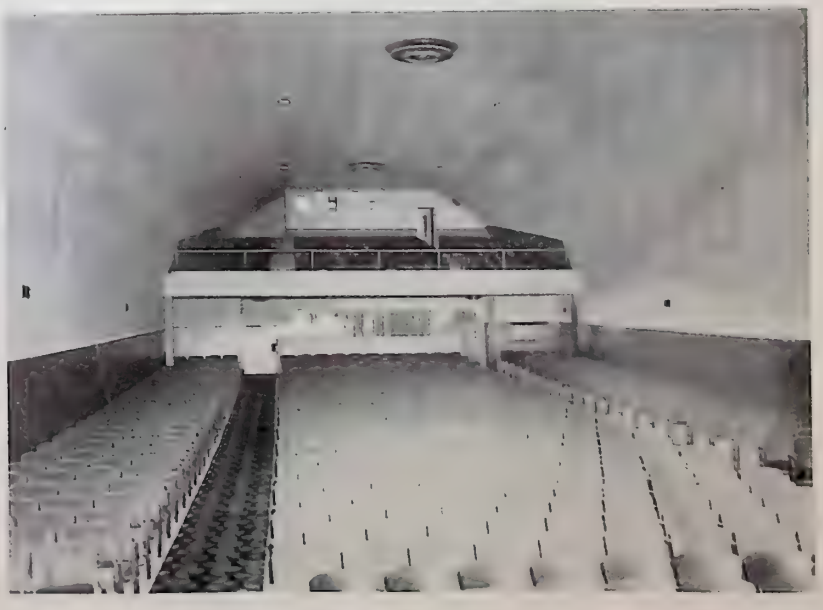
Doors into the 16x30 foot lobby are Douglas Fir with only the two designed for entrance purposes possessing hand grips.

The auditorium above a 6 foot baseboard of coral painted cement plaster is a combination of 24 inch plain and perforated celotex acoustical tile running horizontally to maintain a regular pattern. All are painted green with a dropped ceiling of a lighter tone of the same color. The combination of International and Griggs theatre seats are trimmed in coral and green. The Mohawk carpets are a relatively simple pattern in red, gray, and gold, while the stage and exit draperies are gold trimmed dark green velour, with a silver picture curtain. Footlights with dimmer controls are wired into three series of different colors. The Vallen curtain control is operated from the booth and in addition to Vallen curtain track, the stage is equipped with microphone and automatic record player equipment.

The ceilings of the lounges and toilet rooms are of white Celotex tile. The walls of the ladies lounge are painted in rose with all other rooms painted in aqua. All floors are asphalt tile in ivory and black. The Ilan is completely air-conditioned, using a Carrier system and is designed for the playing of first-run westerns and musicals with a net admission scale of 12c for children, 29c for students, and 42c for adults.



DECORATIVE PORTS relieve the simplicity of the front. A large block panel houses the boxoffice and lends a modern air to the otherwise simple design. Below, note the air diffusers and down lights in the dropped ceiling which must be ventilated to carry off resultant heat. The cry room is below the balcony and to the right. Staggered seating provides for the best possible viewing angles.





OPENING NIGHT at the Ilan features an address by Mayor Gordon Butler, as introduced by Mr. Beach, and drew an overflow crowd. Praise was expressed for the beauty and comfort of the theatre and its exceptional appointments. In the inner lobby, solid wooden doors produce a light trap to protect the auditorium and a recessed confection stand provides adequate service. Inside this lobby, are the several frames used to advertise coming attractions. Equipment costs for this house totaled $40,000.



THE LARGE CONFECTIONERY STAND, above, boasts of a Star popcorn machine, Drincolator dispenser serving Coca Cola and lime, an ice cream cabinet, and the usual candy and cigarette counter. All decoration, draperies, stage curtains, and carpets, are the work of Southeastern Theatre Equipment Company. The projection booth, not shown here, rests on the same special construction as the balcony, and is equipped with Super Simplex projectors, Snaplite lenses, Peerless Magnarc projection lamps.

A Pictorial Study of – THE STATE, HOLSTEIN, IOWA

Designed by architects, Peacock and Bolongia of Milwaukee, Wisconsin, for Mr. and Mrs. E. W. Kugel, the 450-seat State Theatre, Holstein, Iowa, is built on a lot 50x150 feet and cost $41,000.00 without equipment. Opening on September 2, 1948, this very modern little theatre is designed to serve a rural community with first-run in the county at an admission scale of 40c and 45c. Three changes weekly with double features on Friday and Saturday bring comedies, musicals, westerners, and light dramas as the most popular film fare. Built around the use of 40-foot quonset arches, good use has been made of modern, decorative materials. The result is a theatre that could well grace a larger community, and 1500 populationed Holstein is justifiably proud of it.

The front was designed and fabricated by Ben B. Poblocki and Sons Company and incorporates an under canopy area of maroon porcelain enamel on steel, an open-face lobby, and a maroon island boxoffice. The canopy is trimmed in stainless steel, outlined by parallel lines of red neon, and the maroon name and feature sign is serviced from the canopy roof through a door to a room which provides adequate space for letter and other storage. Upper portion of the facade is stucco trimmed with face brick with a pleasing overall result. One wall of the lobby is papered with Varlar stainproof, washable paper in a large, green and white leaf pattern with the other walls in a vertical stripe weave pattern in green and white. The lobby floor is green asphalt tile while the ceiling is light celotex acoustical tile. All doors and trim are birch slab in natural finish.

The foyer carries the same combination of large leaf and weave wall paper pattern, except in rose and white, with the ladies lounge papered in red and white ivy leaf on two walls and the others in red plaid. Ladies toilet room is in green tile pattern. The men's toilet room is papered with a western pattern on one wall, with the other three in brown plaid. All floors are asphalt tile.

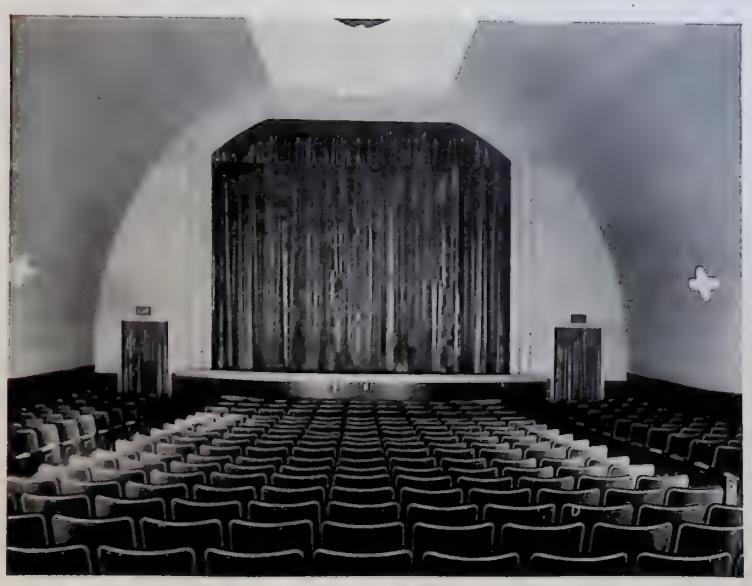
Two cry rooms, papered in a blue nursery pattern and having blue asphalt tile floors, are located at opposite ends of the foyer and contain six seats each.

The auditorium has a natural varnished wainscot of masonite with the areas above finished in three shades of tan celotex plank, with a dropped ceiling containing the air diffusers and indirect lighting cove. No wall lights are used in the auditorium, but three 10-watt bulbs concealed on the foyer deck, reflect sufficient light to illuminate the auditorium during the show. The stage has four 150-watt floodlights recessed in the floor. All lights are dimmer controlled.

A 25-ton Carrier refrigerating unit provides air conditioning for the auditorium with a separate 5-ton unit providing similar treatment for the lobby, office, boxoffice and booth. Two separate forced air heating plants burning oil, in similar manner heat the two zones.

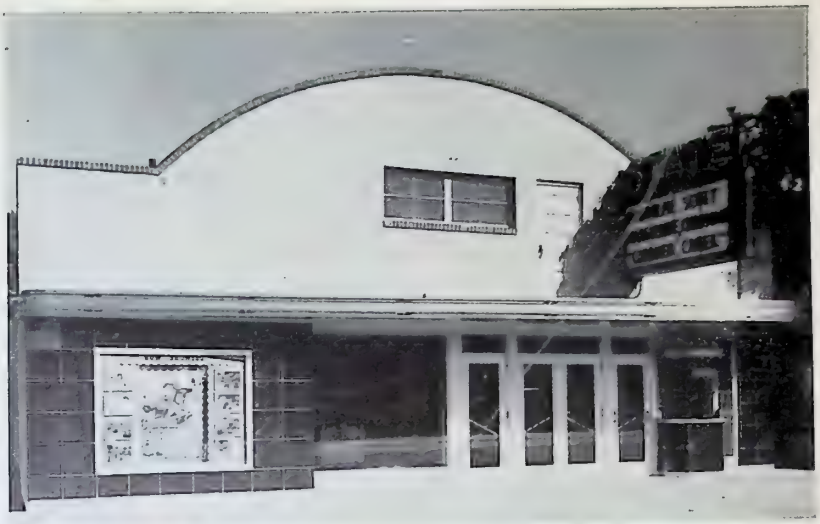
As part of the theatre equipment, including the projection and sound equipment and about 300 seats, was moved

ORNAMENTAL PLASTER PLAQUES of oyster white against tan celotex plank gives a highlight to the simplicity of the auditorium. Rich gold velour draperies and the dropped ceiling cove are further features. Modern, decorative materials throughout the theatre achieve a graceful effect.





THE EFFECTIVENESS of the large, figured Varlar paper and central stepped light feature in the ceiling of the lobby are noteworthy. Below, the foyer, looking toward the cry room. The popcorn machine is judiciously placed.



A JUDICIOUS USE OF NEON TRIM in the name sign and on the canopy highlights the front. Below the position of the two cry rooms, behind the side seating banks, provides very accessible choice locations. To the left of the booth port holes can be noted the large, view window in the owner's office which gives him constant surveillance and even quick communication with his seated audience; and, particularly in small communities, such attentions must be appreciated. Bottom, the proud owners.





from a dismantled, old theatre, the new equipment purchased, including 150 additional seats, reupholstering the old seats, carpets for the foyer and aisles, stage curtains, curtain control, cry room speaker · equipment, new projection lenses, and draperies cost only $5600.00. Purchased new, their cost would have been $20,000.00.

Seat spacing is 36 inches back-to-back and all seats are upholstered in gold to match the rich stage curtain and exit draperies by Metropolitan Scenic Studios of Omaha, Nebraska.

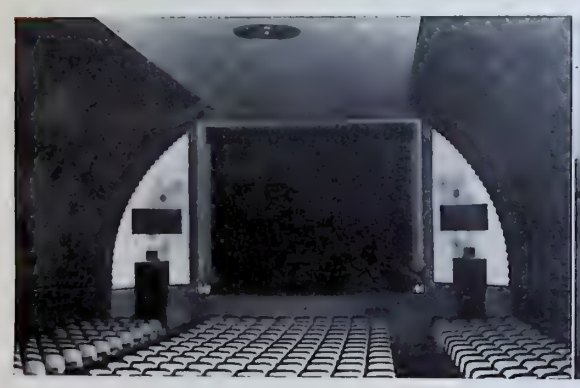
Among the equipment used are Wenzel projectors, Ballantyne Royal Sound-Master sound, Ballantyne Lightmaster projection lamps, Ballantyne Lightmaster rectifiers, GoldE rewinders, Super Snaplite lenses, Strong-Zipper changeovers, and Alexander Smith-Crestwood carpets. Also General chairs, Neumade film cabinets and a Vocalite screen.



A Brief Sketch of – THE MOLALLA, MOLALLA, OREGON

The Molalla Theatre, Molalla, Oregon, which opened during the early part of last year, is another of several increasingly popular quonset designs. This new house, under the ownership of the Molalla Amusement Company, combines the use of Motiograph-Western Electric sound with Motiograph AA projectors, Kollmorgan lenses, Robin-Imperial motor generator, and Motiograph high intensity lamps. The Datone screen measuring 13 feet and six inches by 18 feet, is set off by moderne damask stage curtains and grande velour valance and aisle heads. The foyer of the Molalla utilizes a plaster ceiling with walls of poplar plywood and indirect neon lighting. Rest rooms are carried out with tile floors and walls and plaster ceiling. A summer-winter heating and cooling installation asures comfortable indoor temperatures at all times. The heating unit is oil-fired while the air conditioning system is water cooled.

THE AUDITORIUM of the Molalla displays the tasteful utilization of different shades of acoustical tile and masonite wainscots. Heywood-Wakefield self rising Encore chairs, Karagheusian Ridgefield grade carpets, year-round air conditioning, and indirect lighting complete the features of this house.



FRONT OF THE MOLALLA is a separate one-story high building containing the entrance rooms and one 16 x 22 foot store. Set well ahead of the all-steel portion, a stepped wall setback creates an artificial square design. Wagner letters dress a tidy small marquee. The store is at the right.



A Brief Sketch of – THE STAR, SOUTH HILL, VIRGINIA

Another theatre, the Star, South Hill, Virginia, owned and operated by Chris W. Geoghegan, opened its doors on February 16, 1948. A reinforced quonset, it was built in a neighborhood shopping district serving the counties of Mecklenburg, Lunenberg, and Brunswick. A 520-seat house, the Star is another venture on the part of Geoghegan who has operated the Colonial here for the past 15 years. Lobby, foyer, lounge, and toilet rooms are carried out with asphalt tile floors in cream and brown. All woodwork is trimmed in green with a four foot brown base and the remaining walls and ceilings in buff. To the rear of the auditorium, cry rooms have been provided for infants that inadvertently spoil the show for other theatre patrons. This innovation, comparatively new in that area, has become a tremendous factor toward the enhancement of patron goodwill. The Star was constructed in little more than 60 working days, and all equipment, except the air conditioning, was the RCA line sold in that area by Elmer H. Brient and Sons.

BEIGE COLORED structural glass with wine stripes face the front of the Star beneath the canopy. The canopy is trimmed with stainless steel and the walls above are in a cream plaster trimmed with terra cotta. Note that the small marquee may be serviced from the canopy through a door to the letter storage room, a very handy innovation.



THE AUDITORIUM of the Star is decorated in four shades of blue on walls and ceilings, maroon and gold stage drapes, gold front curtain, red and yellow carpets, and blue, cream, and maroon seats. U. S. Air Conditioning washers with a grill on either side of the stage insure comfortable temperatures. Other patron facilities utilize the latest in modern equipment.



Studios of Radio Station WBAL, Baltimore

Theatre's Influence on Radio Architecture Emphasizes the Kinship between Industries

As broadcasting in general and, since the fall of 1926, the National Broadcasting Company, Inc., in particular, has developed, radio stations have, as the techniques of the industry have advanced, swung to the philosophy of strong local stations, outlets which are dominant in their own right as well as by virtue of the high-powered — and high priced — entertainment piped in over the leased wires of a national network.

Thus became essential the creation of modern studios, of suspended, vibrationless construction and acoustically treated to give the proper tonal qualities to the originating program. And the trend, set by the progressive stations, has developed into a must for those looking forward to the time when the same facilities will be used in frequency-modulation (FM) broadcasting and television.

Throughout the development of new and better studio facilities, the radio industry, with its scientists and engineers, has borrowed generously from the American motion-picture theatre, using some of the cinema's developments in status quo and adapting other advances to specialized use.

Thus it is that there is here presented in these pages—with permission and cooperation of Harold C. Burke, the station's manager—a review of some of the more theatrical features, done in pictures by George R. Wikle, official photographer of the Jay Emanuel Publications, Inc.

THE NEW HOME

It is probably of more significance than mere coincidence that the new studios and offices of Radio Station WBAL in Baltimore should make their public entrance into the civic life of the Monument City on Labor Day 1947 for, early in those post-war days, construction of any type has involved considerable sweat and toil, and very possibly not a few tears.

But whatever were the vicissitudes of travail, the Hearst Radio, Inc., has settled into the routine of broadcasting over the station's 1,090 kilocycles—with 50,000 watts power—the full-time schedule of entertainment and public-service programs, or its origination as well as of the National Broadcasting Company.

While WBAL presently broadcasts only on its assigned amplitude-modulation frequency, the future has been anticipated, and in this second radio showplace* all necessary wiring and facilities have been incorporated to handle both FM broadcasts and television, with one studio reserved for the exclusive use of sight-and-sound programs.

The Studios

To handle all types and sizes of programs, with and without studio audiences, eight studios have been provided: four on the first and four on the second floor.

Studio A and Studio B, are twins in design and side by side at the rear of the first floor. While of a sufficient size that a small audience might be accommodated, it will be rare, indeed, that such will happen; for, as in many another radio station, the frequently recurring

* The first: WFBR, opened in June, 1939, and pictured, in conjunction with the Centre Theatre, in the 1940 edition (pages 75 through 78) of this publication.

THE NEW BUILDING for the studios and offices of WBAL, on upper Charles Street in the City of Baltimore, shows, by night or day, many points of kinship with the modern motion-picture theatre, from the back-lighted, vertically-arranged call letters on the facade, to the real theatre-style

Studio E that so emulates the cinema that the latest Push-Back chairs have been installed for the comfort of the studio's audiences. Just as radio has borrowed from the cinema, and adapted its borrowings to its own purposes, so the theatre may draw many an idea from radio broadcasting studios.







STUDIO F, the "studio of tomorrow today," is designed to accommodate small audiences and utilized the latest in acoustic treatment, the diffusispheres recently developed by engineers of the National Broadcasting Company. At the piano end the spheres are yellow as is the lightning streak on the left wall. The dark spheres are in a deep maroon. The ground color is a neutral gray. At the piano end a plush traveler can be drawn when it is desired to have more sound absorption. The right wall and ceiling are splayed for better acoustic effects.

need for various equipment and gadgets necessitates these items being immediately available—and ofttimes on too short a notice to keep them in dead storage. Each studio has its own control room.

Studio C is the small first-floor studio for speakers, newscasts, and other programs requiring only three or four people for the broadcast. The control console is located in the master-control room.

Studio D is the newsroom, from which newscasts, replete with the nonstop tap-tap-tap of the battery of the wire services' teletypes, can be made, either as part of the station's daily routine or as an unscheduled interruption for an E.O.S. news flash. Being on the first floor and with plate-glass windows instead of a regular partition, it becomes the cynosure for all visitors, whether business callers waiting to be announced or sight-seers awaiting the start of one of the regularly conducted tours.

Studio E, on the second floor, is the most theatre-like of all the eight studios. Indeed, it is a 160-seat theatre, where the audience may watch and enter into the spirit of the program from the cinematic comfort of Kroehler theatre-type Push-Back chairs.

The stage is on two levels, which can be separated by a plush traveler, with the orchestra placed on the one-step-up rear portion and the individual artists doing their stuff on what might be called an over-size apron. A microphone, suspended from the ceiling (at a level out of the audience sight lines), is used for the solo pick-up, while other members of the cast and the announcer or master of ceremonies use standing mikes, generally positioned in the outer quarters of the stage area.

The side walls are finished in relatively smooth acoustic plaster, with various vertical segment splayed at varying angles in order to eliminate unwanted sound reflections but at the same time retaining tonal livliness.

The rear wall of the auditorium is passed with rockwool over which is laid Transite. The rear wall of the stage has six vertical cylindrical panels for bettering the acoustic properties of the air theatre. These panels can be shut off by a second traveler where a more subdued sound is required.

The control room at stage right is windowed so that the engineers can keep an eye on the audience as well as the program.

A battery of flood lights, as well as individual wall flood lights, throw further illuminating brilliance on the performers.

Studio F, on the second floor, is the most dramatic of all: the "studio of tomorrow today"! Here has been used the so-called diffusispheres devised a couple of years ago by acoustic engineers of the National Broadcasting Company. Modern design, however, has affected these spheres, too; for, where equal-size spheres were originally placed at random, the present studio achieves the same end by utilizing spheres of varying diameters but arranged in a special design. The color scheme throughout the studio utilizes yellow and deep maroon—akin to the official colors of the City of Baltimore — on a neutral gray background. The working end can be



STUDIO E, the "air theatre," is truly a theatre redesigned to meet the specific requirements of broadcasting. The walls and ceilings are splayed to achieve the best acoustic effects, in association with the cylindrical panels at the back of the stage and the Transite-covered rockwool on the rear wall. The stage is equipped with two sets of travelers: the wall-covering rear set is drawn when more absorption is required and the front set drawn to cut off the up-stage music equipment. For the audience 160 Kroehler Push-Back theatre-style chairs were installed.

covered by a plush traveler when needed.

Splayed walls and ceilings, and the rockwool-and-Transite treatment, have been used here as in the main auditorium.

Studio G, on the second floor, is designed to create a homelike atmosphere with hardly more than a microphone to indicate there is an "ulterior" purpose. There is one, however, and that is mainly auditioning. The parlor effect, with its fireplace framed in ornamental tile and the other acouterments of domesticity, should greatly minimize the typro's greatest persecution, "mike fright."

These facilities are also used as a special speaker's studio, where the great and near-great of Baltimore and Maryland may address "My friends" in solid comfort without the distractions of commercial utility.

Control for this studio is made from the Studio E control room.

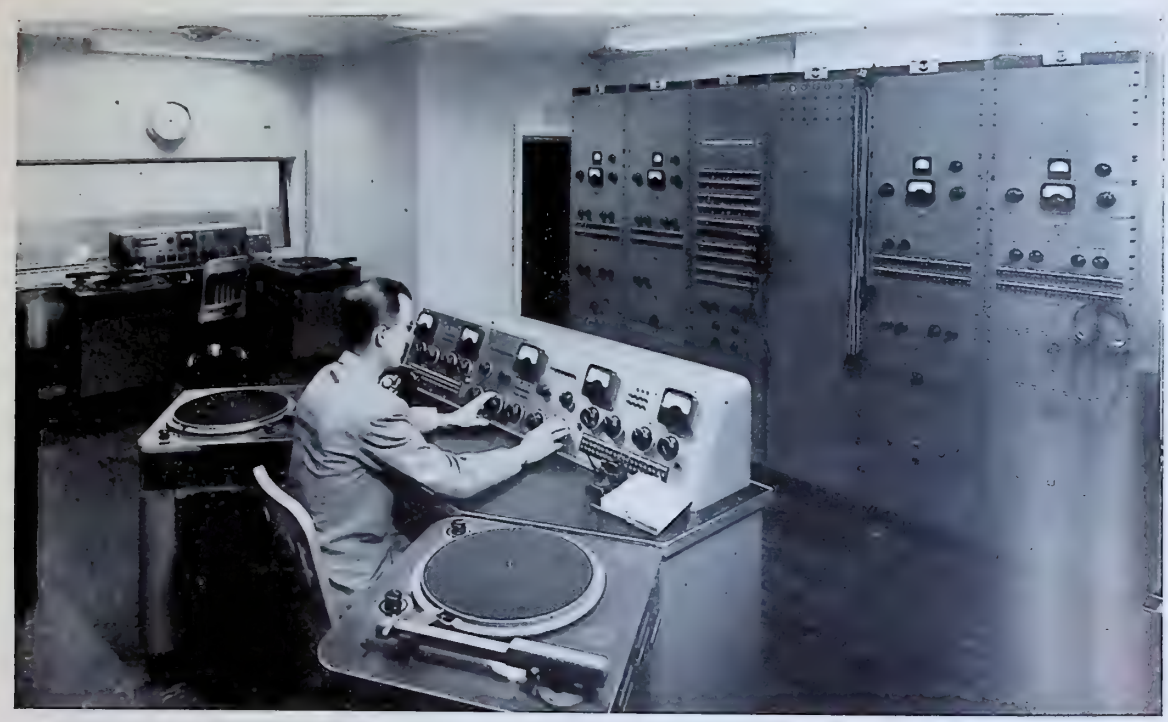
Studio H is the television studio, designed, engineered, and equipped to provide Baltimoreans with the best of locally-originating sight-and-sound entertainment when all the details with the Federal Communications Commission

STUDIO A, along with its twin, Studio B, are strictly utilitarian, to accommodate a variety of programs generally staged without audiences. While the room has aspects of storage space, the various items noted in the picture are those constantly put to good use in production of programs.



STUDIO C is used by newscasters, speakers, and small groups not needing much more than one or two microphones. The acoustic treatment is similar to that of the other and more capacious studios. The control room, back of the window, is actually located in one end of the master-control room.





THE MASTER CONTROL ROOM, with R. L. Duncan, chief engineer, here riding gain on an incoming NBC program, is the heart of the radio station. Here are received all programs—of studio, nemo, or network origin—and channeled to the transmitter. The master-control engineer can also be his own disk jockey and use the dual turn tables for electrical transcriptions (33-1/3 rpm.) or records (78 rpm.) as the occasion arises. The single pickup arm can be used on vertically- or laterally-cut transcriptions. While the design and wiring is strictly WBAL, the equipment is all RCA.

shall have added the "TV" to the station's call letters.

However, television is not restricted to this special studio, for both Studio E (the air theatre) and Studio F (the modernistic one) are wired for video and audio pickups.

Rest of the Building

In the studios, of course, are found those attributes that stem from theatre design, but the entire establishment sparkles with touches of smart showmanship.

Dominating the facade is the white stone central portion, flanked by face brick laid similar to that of the structure on the south side. Set out from the white panel are the station's call letters. Being back-lighted, at night the letters stand out in quasi-silhouette from a brilliant spot of light. Over the metal-framed door is a stylized symbol representing the broadcasting industry.

The second-floor promenade combines the features of a foyer, standee space, and lounge, furnished in modern good taste for old-fashioned comfort for those who call on business or await the time when Studio E is opened take an audience. Off this area are the ladies' and men's rooms, the audition room, and Studio F, as well as the station manager's office, and the short corridor leading to the air theatre.

Part of the mechanical equipment is located on the upper floors, while the balance is in the basement where, also, are musicians' and staff members' rooms.

THE MASTER CONTROL ROOM, with R. L. Duncan, chief engineer, here and equipped in keeping with the modern functionalism of the entire building. The office, as throughout the building, is fluorescent-lighted, with fixtures set flush in the ceiling which is finished in perforated Transite.



THE PROMENADE on the second floor, is designed to blend characteristics of lobby, standee space, and lounge, where business callers or sightseers (the studio has conducted tours) or audiences-to-be can relax in comfort. Toilet facilities are through the doors at the picture's right.



Comfort and Safety of the Audience

An Interest Provoking Chapter From A New Book on the Derivation of Plan From an Analysis of Function

Since books on theatre architecture are conspicuous chiefly by their scarcity, the publication of a new work in this specialized field is welcome news indeed. And when that work buttresses the theory of theatre design with an abundance of practical information, the news is doubly welcome.

Harold Burris-Meyer, of the Stevens Institute of Technology, and Edward C. Cole, of Yale University, have written such a book. Soon to be added to the Progressive Architecture Library as published by the Reinhold Publishing Corporation, their treatise entitled THEATRES AND AUDITORIUMS, deals primarily with planning a theatre which will be both profitable financially and successful architecturally. Its modus operandi is the derivation of theatre planning from an analysis of function. While the legitimate theatre figures prominently in the presentation of data, the principles involved are generally applicable to motion picture theatres.

The following article, which forms a chapter in the book, is reprinted here through the kind permission of Mr. Burris-Meyer and Mr. Cole.

By Harold Burris-Meyer
Stevens Institute of Technology
and Edward C. Cole, *Yale University*

Front Service Rooms

The playgoer arrives under the marquee and proceeds to foyer, box office, lobby, house, lounge, and back to marquee again usually via lobby and foyer. It is good showmanship to conceive of the playgoer's progress through the theatre as a parade in which the playgoer will enjoy participating. Comfort and safety are primary considerations in planning those parts of the theatre through which the patron moves.

When the annual visit of the circus constituted the only show business in a community, the audience stood for crowding, hard seats, soiled clothes, dust, and perhaps a long trip home, and could spend the next day recuperating from the fatigue, excitement and condiments. The audience could, would and did take it. The fact that people now buy seats in second balconies of theatres and in the bleacher sections of ball parks shows that hardy souls are still among us. However, there aren't enough people willing to look upon theatre going as a challenge to their fortitude to pay the bills for any but a very few exceptional theatres.

In other words, comfort is the favorite condition of the theatre-goer and he not only wants it but demands it, usually avoiding those theatres whose furnishings lean toward the ascetic. This article considers provisions for comfort and also safety, derived from traffic, sight and hearing requisites; and the functional design of the front service rooms.

Exterior

Comfort and safety become the concern of the showman when the patron first approaches the theatre. Architecturally, plenty of light on the street in front of the theatre, on driveways about it (5 fc. minimum), clearly marked crosswalks, a lighted parking area (5 fc. min.), lights under the marquee (10 fc. min.), and illuminated automobile traffic markers are requisite. An illuminated automobile call is indispensable where any substantial number of patrons use chauffeur-driven cars.

If illumination in front is not provided by the marquee, it may be obtained from flood lights which illuminate the building, decorative lamp posts, bracket lights, or portico lights. Illumination under the marquee of minimum safety standard is poor showmanship. The higher the illumination, the more the audience makes its own show. Illumination of more than 25 fc. may be in order.

The marquee must be drained so that a curtain of water is not interposed between the automobile and the sidewalk.

A high degree of illumination is especially necessary wherever there are steps outside the marquee, or between marquee and foyer. Outside illumination is no less important if the theatre is hidden away in a school building. It is not enough to make it possible for the audience to see after it has got into the building, the school building plant which contains the theatre must include theatre requisites in the planning of the whole building.

Changes of level from sidewalk through the vestibule, foyer, and lobby into the house are best made by ramps. Stairs are forbidden by some building codes and permitted only under careful restrictions by others. Isolated steps and steps at doors are to be avoided as hazardous. Where steps occur, they must be adequately lighted.

Doors into the Foyer

Fire regulations provide that all theatre doors must open out. Traditionally the doors to the foyer are hung in pairs, and are in most cases metal with large glass panels. For the sake of fulfilling their function there must be enough to handle the whole audience without congestion in a few minutes. For the purpose of making foyer doors architecturally impressive they are often made wider than is efficient. Thirty-two inches should be considered a maximum width for the single unit of a pair of double doors. The glass lights are principally for the purpose of giving daylight illumination to the foyer, one of the few places in the theatre where there is any use for it.

Where the theatre building is used for other purposes and access is via corridors, the entrance to the building itself must be so planned as to conform to minimum foyer design standards.

Foyer

Foyer area and arrangement are determined by a study of the traffic loads. In addition to traffic, the architect is concerned with doors and other entrances, floor, wall, and ceiling materials, heat, ventilation and light.

There is more traffic through the foyer than through any other part of the theatre. It is a room outside the theatre proper. The floor surfaces, therefore, must stand a lot of traffic, must not be stained or rendered hazardous by standing water, must be easily cleaned, must not be uncomfortable to stand on. Stone and tile are popular and good but are best covered by perforated rubber matting in wet weather, as they tend to become slippery. Water tracked in from the sidewalk and the dripping umbrella of the patron waiting for friends or for a ticket can soon create a safety hazard on stone and tile.

Wall surfaces must resist defacing to at least shoulder height, and be easy to clean, and the junction between wall and floor must be watertight. These requisites rule out plaster walls and, except where the foyer is so large as never to be crowded, wood panelling. Doors must all be silent and self-closing. If there is access from foyer to offices or other parts of the building, the doors are made as inconspicuous as possible to keep theatre patrons from using them.

Since hard-surfaced rooms tend to be excessively noisy, it is desirable to surface the ceiling and, where appropriate from a decorative point of view, upper sections of the walls, with sound absorbent material. Such materials must be easy to clean. The higher the absorption coefficient, the more appropriate the material.

Since occupants of the foyer are dressed for the weather outside, provision for heating or cooling need not provide the difference between outside and inside conditions demanded by the interior of the theatre. There is no need for heating to obtain temperatures above

55° F., or cooling to more than 5° lower than the outside temperature. Humidity control is welcome to the same degree as that provided for the house. If air is blown into the foyer to accomplish any or all of the tasks of air conditioning (heating, cooling, ventilation, humidity control), it must not be re-circulated. Warm air may be forced into the foyer in winter as a buffer against outside cold air, and cool air in summer as an attraction to passers-by.

The purposes and requisites for lighting in the foyer are the same as those which apply under the marquee. If any variation in illumination is undertaken, the bright spots must be at steps, areas in front of ticket windows, and area about the ticket taker's stand at the entrance to the lobby. Bright light sources within the normal visual angle are a source of annoyance and fatigue, which rules out sconces, standlights and usually chandeliers.

Standard equipment for foyers includes the ticket taker's box (portable) which is only in place when it is in use, and rails to prevent the forming of double lines at ticket windows. If the foyer is so planned that lines of traffic do not intersect, the rails are dispensable. It goes without saying that the decorative treatment of the foyer must be such as to make it a pleasant place to be. A cold, dark, forbidding foyer discourages theatre-going.

Box Office

The most efficient box office is the change booth at the turnstile employed in some motion picture houses. Next in order of efficiency is the ticket cage at the entrance to the foyer which dispenses tickets automatically for unreserved seats. In both these types of box offices, the speed with which change can be made is the factor which determines the number of persons which can be handled. Automatic change dispensers are now practically universal in such box offices.

The problem of the theatre which has reserved seats is much more complex. Ticket purchasers often request specific locations. There is often considerable discussion, and change-making is not restricted to silver. The size, arrangement, and equipment of the booth constitute the most complex problem in booth design when reserved seats are to be handled. For all except the smallest or most specialized houses, the reserved seat policy must be envisioned.

The box office needs at least one window for current sale per approx. 1250 seats, and one window for reservations. The farther these windows are apart the easier the traffic problem will be. If the box office is at a corner, one window can be on one side and one on the other. The island box office can have lines on either side. The ticket bar as used in Europe has the advantage of handling more simultaneous transactions than any other type since the staff is not restricted to the number of windows. It has a further advantage in that it eliminates the elements of remoteness, formality and regimentation which the window box office so often fosters. In large houses, ticket sale may be divided between windows or sections of the ticket bar as follows: current show sale; reservations for current show; advance sale; each category further subdivided by price or location, or both.

Size and shape of box office are determined by (1) number of windows with their attendant equipment, change drawer, automatic change machine (2) wall space for the ticket racks which includes the day board for the current performance, the rack containing tickets for the rest of the current week, and racks containing tickets for subsequent weeks. Two day boards help to minimize ticket purchase time if one is used for the current and one for the next performance, especially on matinee days. Rack sizes vary with the size of the house but are seldom less than 20" x 30". For large houses orchestra and balcony tickets are sometimes efficiently handled at separate windows. If the day board is on the wall containing the ticket window, the ticket seller does not need to turn around during the transaction. Telephones, a desk, and a safe complete the useful box office equipment. The safe must be large enough to contain all the racks without removing tickets from them, in addition to the usual cash box and ledger. Access to the box office is

INCANDESCENT BULK in the soffit of the new marquee of the big Paramount Theatre, New York, exemplifies the safety features and dramatic qualities of a well lighted front, as expressed by Messrs. Burris-Meyer and Cole. This huge three-sided marquee attraction board uses 17 and 10 inch Adler third dimensional plastic letters interchangeably with the same company's 24, 16, 12 and 10 inch aluminum letters. Hal Pereira was the architect.
(Photo courtesy of the Adler Silhouette Letter Co.)



by a single door inside the theatre, often from an adjacent business office. Where the ticket bar is used, racks are on the wall behind the bar and the door in that wall leads into an office which serves all other box office purposes except ticket dispensing. The light in the box office is best concentrated on working areas with additional general illumination. School and college theatres are often handicapped because they were designed without box offices.

Confusion, inefficiency and ill will engendered from lack of adequate architectural provision for the one point at which the theatre staff has business dealing with its customers can do much to discourage patronage. A typical condition is one in which the curtain is held while ticket sellers fumble through the box of tickets to try to accommodate the last-minute box office rush. The box office takes up very little space and cannot be neglected in any type of theatre.

For the turnstile box office and the automatic dispensing motion picture theatre box office, specifications drawn by the manufacturers of the box office equipment may be followed.

Lest it be forgotten, the box office needs ventilation as much as any other part of the theatre, and heating to counteract blasts of frigid air from the foyer.

Lobby

The requirements for lobby size and shape are derived from traffic studies. In the interests of safety, doors must usually occupy the whole wall between foyer and lobby. Their equipment and swing must fill specifications for foyer doors save that there is never any reason for glass lights in them. Doors between lobby and house may not be necessary unless the show is continuous. Between lobby and lounge no doors are necessary. Whether or not there are doors to the house, the lobby must be quiet, for which reason the floor must be completely carpeted, the walls sound absorbent or containing sound absorbent panels or covered with draperies, and the ceiling sound absorbent. Sound from the lobby must not leak into the house.

Lighting in the lobby must be warm enough to be flattering, bright enough to highlight jewels, so directed that it will not spill into the house. If lobby lights are dimmed during performance, there must still be enough illumination to read the ticket stub, see the stairs, find the coatroom or the lounge. For continuous-run motion picture houses it is desirable to have the general illumination of the lobby of lower intensity than the foyer, to facilitate dark adaptation for the entering audience. These requirements can only be met by carefully planned combination of direct and indirect illumination, i.e., coves and louvered reflectors recessed in the ceiling, chandelier and ceiling, containing a large indirect source of light or many small, flush, ceiling lights with frosted covers, lenses or louvres. Illuminated signs indicating coat room, lounge entrance and balcony stairs or elevator are desirable. Exit signs are requisite over all doors leading to the foyer.

Ceiling height may well depend upon other elements in the theatre structure and a high ceiling contributes to a feeling of luxury. If the stairs have a complete run along lobby walls, the ceiling may well be as high as that of the house. The aim of all decorative treatment must obviously be the promotion of the feeling of luxury.

The furnishings of the lobby are fairly obvious. They include mirrors. In them the theatre-goer can be sure he is seen if only by himself. Mirrors have no value unless they are tall and obviously a part of the decorative scheme. A tinted mirror is to be preferred to the standard silver mirror; it is not so harsh and may be flattering to the modern Narcissus.

Wall tables for flowers and to hold the hat while the coat is being put on, benches to facilitate putting on rubbers, complete the necessary lobby furnishing save where lounge limitations and local law and custom demand ash receivers. Furniture in the lobby must be located in space over and above the clear width required as passageways by building codes. Care must be taken that furniture does not impede audience traffic.

The best carpet is the cheapest in the long run. The original chenille carpet in the lobby of the Roxy Theatre in New York has lasted more than a decade. No carpet could be subjected to heavier wear. Wilton is a good carpet but will not last as long as a good chenille. The design of the carpet may well be planned to lead the audience in the direction conducive to minimum traffic congestion, i.e., from foyer to checkroom, to stairs and crossover, from audience area to lounge entrance by circular path to the left, back to the house. When low intensity lighting is employed to accommodate the audience to a dark house, fluorescent lines in the carpet, energized by overhead UV lamps, have proved to be useful.

Stairs leading to balconies require carpeting for the same reason that the rest of the lobby is carpeted. Maximum comfortable riser height is 7½ inches, and minimum tread width 10½ inches. For added wear, for quiet and for comfort, carpets must be laid on padding.

Balcony lobby provisions for comfort and safety are derived by observing the same rules which apply in orchestra lobby planning.

Check Room

The check room counter should be wide enough for five attendants per 1000 seats in the house. With adequate check room facilities, the efficiency of checking is governed by the size of the staff, not by architectural limitations. Check rooms in balcony lobbies reduce orchestra lobby congestion. Racks built to accommodate coats, hats, sticks, umbrellas, and parcels, used in some of the new dining rooms and check rooms of some modern hotels may well serve as models for theatre check room equipment. Self-service checking apparatus, using patented locking clothing holders may be considered.

In conformity with the principle of keeping traffic moving to the right, the check room is best located at the right side of the lobby as the patron enters from the foyer. The fact that it is on the patron's left as he leaves the theatre is of little consequence because he faces no opposing traffic and he has already found out where the check room is.

Lounge

As the audience comes out of the house at intermission time, it finds the lounge most easily if it is located at the right, i.e., at the opposite side of the lobby from the check room. The lounge, as its name implies, is the place where the audience stretches, talks, and refreshes itself during intermissions. Its hall marks are the deeply upholstered chair and the sand-filled receptacle for butts. In it are bar, telephones, water coolers and entrances to lavatories.

Floor, walls and ceiling of the lounge merit the same treatment as their counterparts in the lobby and for the

IN THIS VIEW of the lobby of the recently remodeled Washington Theatre, Granite City, Illinois, designed by architect Leo F. Abrams, the opinions of Messrs. Burris-Meyer and Cole seem to be borne out with grace and simplicity. A large mirror provides an adequate spot to primp or straighten a hat, besides adding size and grandeur to the room. Several side tables are well placed to catch the everpresent bags and bundles while coats are pulled on or off. And the built-in upholstered benches look comfortable and inviting. Modern columns lend an air of grandeur.



same reasons. Lavatories may be located either at the right or left of the lounge entrance provided they are both readily visible to the patron entering the lounge; or they may be located one after the other as he starts a circuit of the room keeping to the right.

The lounge needs overstuffed chairs arranged as though in a living room, save that their normal groupings for conversational purposes need seldom provide for more than four. The occasional straight chair will serve to make the normal groupings flexible. Small but rugged tables to hold lamps, ash trays and drinks, and many ash receivers complete the requisite equipment. A piano is decorative and useful if the lounge serves as a room for gatherings other than the intermission audience. A fireplace is useful only if it can contain a real fire and does when the weather makes one appropriate.

Light intensity at lounge entrance, exit, lavatory entrances and bar will naturally be higher than at other areas. For maximum effectiveness, it may well be planned so that as the patron walks through the lounge he passes through alternating areas of medium (10 fc.) and high (25 fc.) intensity. If direct light from ceiling to floor is a part of the scheme for the high intensity areas, sequins and jewelry will sparkle in them and a dramatic effect will be gained from the movement of groups of people.

It is gratifying to note that the vogue of amber lights in public rooms, which made the audience look like cadavers eight days drowned, is passing. White light is harsh and not very romantic. Pale magenta is good for general illumination but must be supplemented by white or steel blue to highlight the audience as mentioned previously. Color is best achieved in shades and roundels or fluorescent tubes. The exposed bulb has no decorative value in most schemes.

A bar in the lounge is a source of income not lightly to be dismissed. In London, a play may run at no profit to the box office or even at a very slight loss, and the theatre may still operate on the profit from the bar. Aside from this, however, a bar undeniably adds to the spirit of carnival and helps to make theatre-going an event. The bar belongs in or near the lounge. Congestion, discomfort and hazards introduced by a soft drink vendor in the lobby or crossover are familiar to everyone.

The proportion of the audience which uses the lounge is, with little exception, limited only by the capacity of the lounge. Lounge area is inadequate in most theatres. It may well occupy all the space under the seating area of the house and the lobby and be supplemented by balcony lounges. In theatres located in warm, dry climates, the lounge may well be outdoors, in which case a large lobby is needed and the lavatories are located adjacent to it. The large indoor lounge constitutes, when properly planned, useful rental space for exhibitions, parties, lectures and meetings at times when the audience is not in the theatre. The lounge is traditionally used for rehearsal.

Most building codes require and wisdom dictates exits from the lounge sufficient to evacuate its capacity crowd at the same rate at which the house may be emptied.

Lavatories

It goes without saying that lavatories must have ante rooms—a smoking room for men, and a powder room equipped with at least one dressing table per 600 seats or fraction thereof in the house, for women. Five urinals, three wash basins and two toilets per 1000 seats are minima for the men's lavatory; five toilets and five wash basins per 1000 for the women's lavatory are minima. Kotex dispensers and drinking fountains are also necessary. Where performances run over three hours, the lavatory traffic is increased fourfold, for which reason it is wise to exceed the lavatory equipment minima by a considerable margin.

Multiple Uses

Restricted building budgets sometimes lead clients and architects to slight or limit the public rooms, or attempt to combine their functions. People still have to get from here to there and still take up the same amount of room whether the builder likes it or not. A theatre wrongly designed in the first instance is seldom susceptible of much improvement. In planning front service rooms in the face of a restricted budget, the same precept applies that has been recommended for other parts of the theatre, i.e., plan a complete and adequate plant, build or finish only as much as the budget provides for, leaving provision for completion when funds are again available. Temporary expedients necessary to the operation of the uncompleted plant are seldom any more annoying than restrictions resulting from compromises, and have the virtue of being remediable.

Auxiliary Uses

When the theatre plant includes, or is part of, an architectural unit which contains shops, restaurant, a broadcast station, or of a school or college, the public rooms of the theatre may well be planned to serve other than theatrical purposes at hours when no audience is present. Conversely, public rooms planned to serve non-theatrical purposes in hours when the theatre is dark may be made to serve the theatre. This condition is a critical one for the theatre in the school, located in a building which is used in part for non-theatrical purposes. If special front service rooms are not provided for the theatre in such a building, the lounge, lavatories, and hallways of the building must be arranged to serve the theatre.

House

If doors between lobby and crossover are used, they will normally stand open except while the play is in progress. The glass partition behind the last row of seats (found in some motion picture theatres) is no substitute for a wall and doors. A 4'6" high wall behind the seats is desirable, to prevent draft and to accommodate standing patrons.

Comfort in the house depends upon: 1, shape and upholstery of seats and the distance between rows; 2, temperature, humidity and freshness of air; 3, position and width of aisles; 4, house lighting; 5, decoration; 6, floor slope; 7, absence of distraction. Theatrical requirements other than audience comfort and safety prescribe adequate comfort specifications for some of these items.

The seat which is acoustically correct will be comfortably upholstered. No less important than the upholstery is the shape of the seat. For some unknown reason the curved back, bucket seat has been popular in America and is installed in many theatres. Sitting with the shoulders pinched forward becomes extremely uncomfortable by intermission time. Flat-backed chairs are therefore the only proper equipment for a theatre. A chair of this sort developed for the Chicago Civic Opera House has proved so satisfactory that it has become a widely used type. Despite the past record of the Provincetown Theatre, hard seats won't encourage repeated patronage. The comfortable seat is no less important in the school or college theatre. Assemblies and commencements held in the theatre will benefit from comfortable seats.

Seats need to be spaced sufficiently far apart to permit passage of people without the occupant's rising. Cramming them close together for the purpose of slightly increased capacity is a very short-sighted policy. Closely spaced seats cause extreme discomfort, especially to tall people. Some inveterate theatre-goers will not go into certain New York theatres no matter what the show. The marginal comfortable spacing, back to back, is 34". Spacing to permit easy passage past seated patrons is 45", back to back.

Seats with springs which raise them automatically or which slide back are considered hazardous by some theatre managers. This feature, however, simplifies cleaning and saves many barked shins. If employed it must be considered in the acoustic planning.

The building codes in most localities set minimum limits for aisle width and number of seats in a row. For economic reasons it is generally wise to use the maximum number of seats per row. Under no circumstances is a center aisle tolerable. Actors abhor center aisles for the very good reason that they split the audience and make the achieving of mass reaction difficult.

Exits

Local and state ordinances governing buildings for public assembly prescribe the number, size, and to some extent the location of exits. In the absence of specific requirements in the laws, the planner may refer to the recommendations of the National Board of Fire Underwriters.

Satisfaction of the code requirements for emergency exits, plus provision for the comfort and safety of the audience as set forth in this article, will result in a house in which the audience will be psychologically and physically conditioned to enjoy the performance to the maximum.

A Review of Recent Theatre Construction

Pictorially Surveying the Design and Structural Trends in New Theatres Opened During the Past Year

In accordance with the practice first inaugurated by THEATRE CATALOG with the Edition of 1940, careful check has been kept, since the form closing date of the preceding volume, on all new theatre construction that has taken place both at home and abroad, so that a representative sample could be recorded each year, pictorially and in great detail. Through this process, and through the cooperation and advice of leading theatre architects, territorial supply dealers, and its own field organization, this publication has been able to bring to the attention of the industry as a whole, many new innovations in design, decoration and patron comfort long before they were generally accepted in more than a small neighboring area.

This practice continues in the pages that immediately follow.

The 27 orthodox roofed theatres, and the eight drive-ins, which are here presented, result from the analysis and elimination of nearly 200 theatres considered. Many of the theatres so analyzed were the equal, and in some cases were superior, to the following; but all of those recorded here, had some one factor of design, method, problem, solution or economy which seemed, in the judgment of the editors, to warrant special attention.

Built under all manner of conditions of climate, available materials, high costs and functional needs, it is believed that the following provides a true cross-section of the year's progress.

The Rex and Duplex *(Twin Theatres)*

Havana, Cuba

In the heart of the shopping district of this Latin-American metropolis is a 20-year-old building of steel and concrete which presented 10,000 square feet of useable theatre space. Back in July, 1938, Vives & Co., S. L., the owners and operators, constructed in this area the 650-seat Rex which played successfully a policy of newsreels and short subjects to a medium and high-class patronage. So successfully, in fact, that it was decided to expand.

Faced with the problem of space availability, Architect Luis Bonich and Designer, Manolo Alvarez designed the 530-seat Duplex, which opened in late 1947, and which cleverly shares the lobby and service rooms of its neighboring brother.

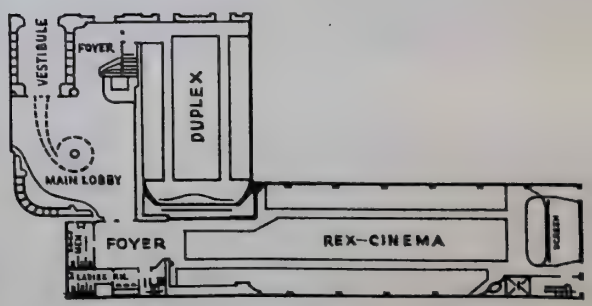
Adaptation of the available space represents an investment of over $200,000.00 plus another $100,000.00 for equipment and air conditioning.

The materials and furnishings used in both theatres are rich and modern. The facade is gray Georgia marble and light green Carrara glass. The lobby is resplendent in Realwood Formica, mirrors, terrazzo floors and colored indirect lighting. The separate foyers and the lounge rooms follow the same pattern of luxury and modern charm.

Each auditorium is as distinct and different in decorative scheme and picture setting as in dimensions. Each, in its own way, possesses a character that is drawn together and accented by the siamese joint of the lobby.

THE RICHNESS OF MARBLE, terrazzo, Formica and etched glass doors flanked by separate box-offices, receives a theatrical lift from the large lighted clock dial that is so convenient to news reel theatre patrons At right is a plot plan that shows the manner in which twin auditoriums fit.







THE SPACIOUS CONNECTING LOBBY (46 feet x 46 feet) has been interestingly photographed as reflected in the mirrored sidewall. Modern furniture can comfortably accommodate 30 waiting patrons. The dominating design of the all-terrazzo floor is a double volute revolving from the base of the mirrored center column to opposite corners. One of the most striking features is the stepped ceiling in soft curves and straight lines, that was dictated by variances in the building height. The entrance doors (below) have stainless steel frames supporting two decorated plate glass panels mounted in parallel planes with one inch of opening between. Edge lighted from below, the etched and painted decoration is on the interior where it cannot be damaged or finger marked. The theme of one set is music and light entertainment; while the other is sports and news.





THE REX, while 10 years old, was recently remodeled and is now comfortably modern. The fluted wall panels with heavy ornamental capped dado are painted in neutral shades and depend on the trough lighting for changeable color and light beam decoration. Acoustics are excellent. A series of soft flowing repeat steps feature the ceiling; and it will be noted that due to the eccentricities of the existing structure, it has been necessary to use an unusual off-balance proscenium. The ornamental panel at the right of the proscenium arch counter balances this oddity, and a seldom-seen island stage apron provides exits at the sides of the stage. Below is a corner of the foyer to the Rex showing the theatre entrance arch and the tastefully arranged drinking fountain and furnishings.

REFERENCE DATA: The Rex

OWNER & OPERATOR: Vives & Co., S. L.
ARCHITECT: Louis Bonich.
SEATING CAPACITY: 650.
COST OF BUILDING:
COST OF EQUIPMENT (including air conditioning): $100,000.
SIZE OF LOT: 10,000 square feet.
ACOUSTICAL MATERIAL: Celotex, Rock Wool, Corkcoustic, Kalite.
AIR CONDITIONING: by Westinghouse.
CARPETS: Crestwood, by Alexander Smith & Sons Carpet Co.
CHAIRS: by Ideal Seating Co.
DECORATOR: Manolo Alvarez.
GENERATORS: by Hertner Electric Co.
LENSES: Super Cinephor, by Bausch & Lomb Optical Corp.
PROJECTION LAMPS: Brenkert Enarc.
PROJECTION MACHINES: by Motiograph, Inc.
SCREEN: by Walker-American Corp.
SOUND: by Western Electric Corp.

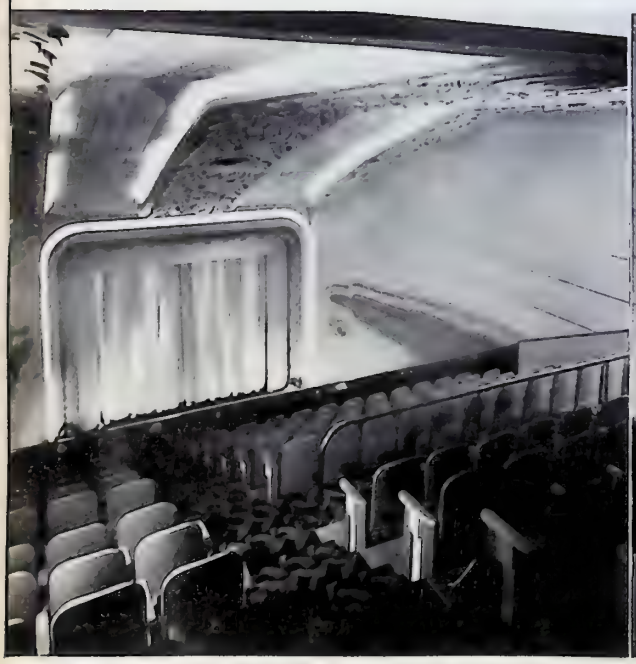
REFERENCE DATA: The Duplex

SEATING CAPACITY: 530.
AIR CONDITIONING: by Carrier Corp.
CARPETS: by J. Rosenheim & Co.
CHAIRS: by Kroehler Mfg. Co.
DECORATOR: Manolo Alvarez.
GENERATORS: Robin-Imperial, by J. E. Robin, Inc.
LENSES: Super Cinephor, by Bausch & Lomb Optical Corp.
PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Brenkert.
SCREEN: by Walker-American Corp.
SOUND: by RCA.





THE NEW DUPLEX is completely different in dimensions and design. As seen from the stage, the projection room is hung below the balcony in order to avoid an acute projection beam angle. Recessed in a rectangular opening, well out over the rear seating area, its utility ports fade into the decorative treatment. The proscenium is an upholstered picture frame that eliminates the traditional draperies but accentuates an undulating, quilted silk curtain. Modern push-back seats, carpeting and air conditioning assure patron comfort. Huge ornamental plaster ceiling panels and built-up ornamented plaster wall panels furnish the only ornamentation and carry out the picture-frame theme. The manner in which the side wall panels join across the balcony facia to produce a huge wreath pattern, nearly circling the theatre, is worthy of note. Also the edge lighting that highlights all ornament. The result is a massive treatment that gives this theatre a feeling of rich quality.







The Richfield

Richfield, Minnesota

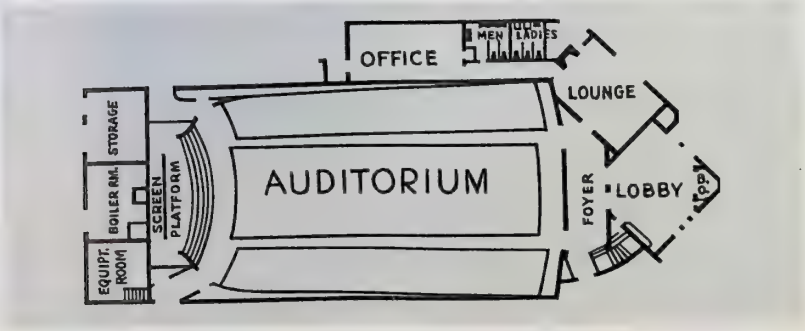
In the suburban community of Richfield, Minnesota, with a population of approximately 10,000, small middle class families predominate. On Nicollet Avenue, a main thoroughfare from nearby Minneapolis, stands the Richfield Theatre, built at a cost of $175,545 for the building, $25,000 for the equipment, and $8,500 for the land—a lot 114 feet by 250 feet. The Richfield seats 920 people and is an excellent specimen of small theatre architecture but it is even more than this. It is well integrated in the community it serves.

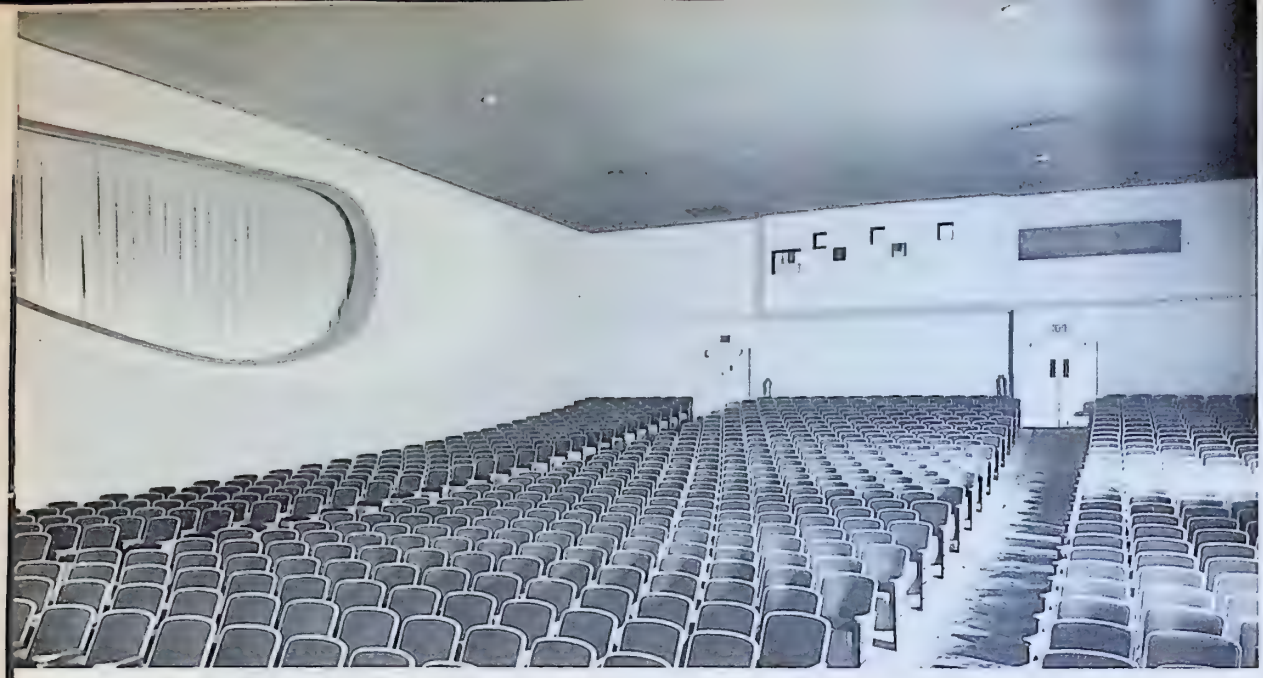
Dedicated primarily to pleasing the visual and auditory senses of the surrounding community and also attracting patrons from the residential sections of Minneapolis, the Richfield represents a constructive experiment in long-range planning. Its design was consciously created and its materials purposely chosen to serve as an architectural paragon for commercial buildings not yet in existence but certain to be erected on adjoining properties. If successful, the plan promised a coherence of appearance not often attained in business sections.

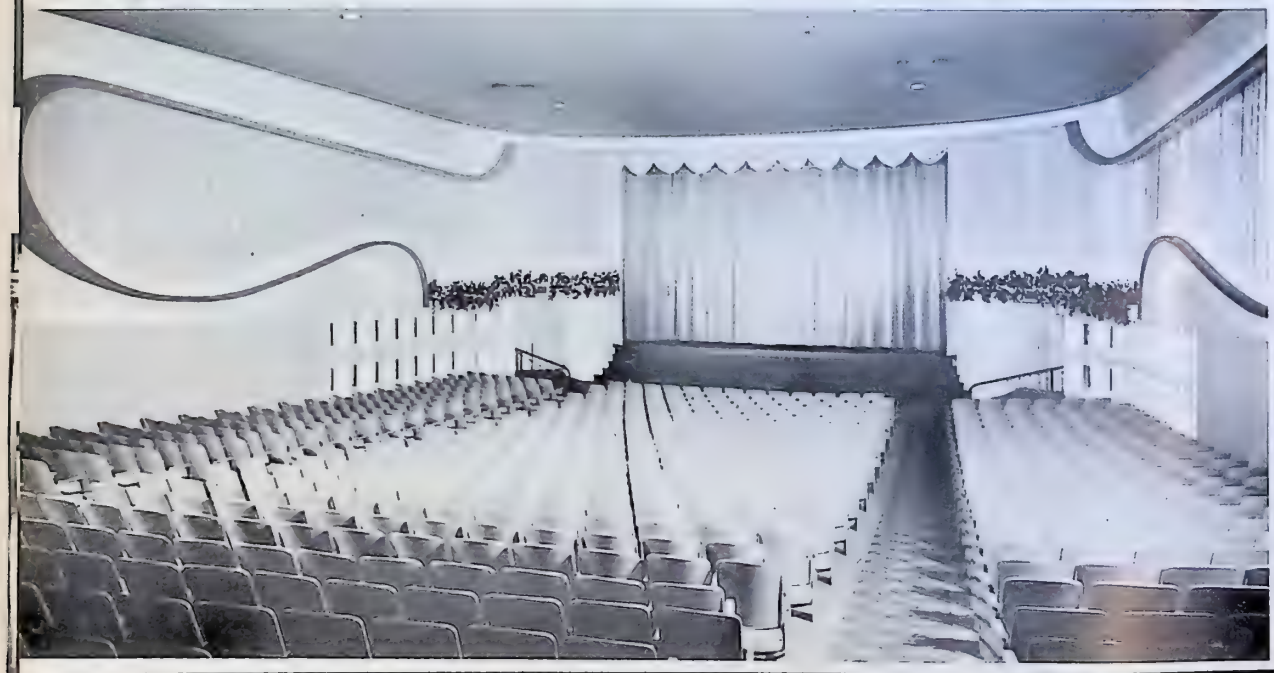
And with an eye to future trends in modern theatre building, the architect abandoned some traditional appurtenances, introduced some new but always logical devices. His purpose, of course, was to retard the inevitable obsolescence that overtakes all moving picture houses. The characteristic marquee with bulb-lit soffit which adorns 95 per cent of all theatres built in the last decade is replaced by a dramatic canopy whose function it is to protect entrance and patrons from rain and snow. This canopy also provides easy access to the attraction spaces on the glass walls, highly effective attention-getters in themselves.

Briefly, this is the anatomy of the Richfield: exterior walls—concrete block plastered and rock-faced ashlar; interior walls — tile, plastered; roof — steel trusses, wood rafters; ceilings—auditorium — rigid insulation; remainder — plaster; floors—lobby, terrazzo—foyer, carpeted; lounge—slate, toilets—tile, remainder—cement.

To enhance an already attractive building it is planned to utilize the walls above the canopy as a support for a curtain of Boston Ivy, and to extend the flower-bed, inside the lounge picture window, outdoors during the clement months. This can be done easily since the Richfield is set back seventeen feet from the property line. This space is pleasingly landscaped. At the sides and rear of the theatre, parking space is provided.







TWO VIEWS OF THE RICHFIELD AUDITORIUM. This room departs from the usual moving picture house design in that almost all painted decoration is eliminated. Wall decoration is obtained by an ingenious adaptation of lighting, using troffers. And, in a unique blend of side walls with screen, the stage drapery is extended back along the walls and illuminated from below. The flat ceiling is painted dark green to eliminate light reflection.

REFERENCE DATA

OWNER: Richfield Theatre, Inc.
OPERATOR: A. F. R. Svensson.
ARCHITECT: George Becker.
SEATING CAPACITY: 920.
COST OF BUILDING (including air conditioning): $175,545.00.
COST OF EQUIPMENT: $25,105.00.
SIZE OF LOT: 114' x 250'.
ACOUSTICAL MATERIAL: Acoustic Celotex Type C-1.
AIR CONDITIONING: by U. S. Air Conditioning Corp.
CARPETS: Ausable Wilton, by Mohawk Carpet Mills, Inc.
CHAIRS: by International Seat Corp.
COINCHANGER: by Johnson Fare Box Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: Sebco, Inc.
DISPLAY FRAMES: Stainless Steel, by Vent & Canopy Co.
DRAPERIES & STAGE CURTAINS: by Frosch Theatre Supply.
GENERATORS: by Century Projector Corp.
LENSES: by Kollmorgen Optical Corp.
LIGHTING FIXTURES: Indirect Cove and Down Light Floods, by Electrical Maintenance Corp.
PROJECTION LAMPS: Brenkert Enarc, by RCA.
PROJECTION MACHINES: Brenkert, by RCA.
REWINDERS: by GoldE Mfg. Co.
RUBBER MATS: by Furness Mat Co.
SCREEN: Snowhite, by RCA.
SIGN & MARQUEE: by Naegele Advertising Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: by RCA.
SUPPLY DEALER: Frosch Theatre Supply.
TICKET ISSUING MACHINE: by General Register Corp.
VENDING MACHINES: Popcorn Machine, by Manley, Inc.
WALL FABRICS: by Frosch Theatre Supply.



TOP: LOUNGE TREATMENT is similar to the motif of a sophisticated modern country house living-room. A fire-place that really burns, picture window and flower bed give patrons a glowing sense of luxuriance—something different and desirable; while the stone and cedar-sided walls and slate flagstone floor require but a minimum of upkeep. **SIDE:** Lobby interior is distinctly functional in design. The steel columns and struts which support the roof and glass walls are left exposed. The pitched roof trusses are inverted and resulting planes simply plastered. The almost fantastic light fixture is made of circline fluorescent tubes left exposed. At the base of the glass exterior walls metal gutters are installed to catch condensation from the glass of which there is an abundance. These troughs are used in the summer as flower boxes. The interesting wall decorations are themes suggested to the artist by the word "Richfield". In this lobby, the architect has produced a thing of beauty, an ideal transition room for patrons both entering and leaving the theatre. **BOTTOM:** Another view of the lounge. This is no run-of-the-mill waiting space. The prevailing restful atmosphere of the room is enhanced by flowers actually growing in a permanent location. Handsome, comfortable chairs skillfully placed at desirable locations contribute considerably to the unusual decor.







The Mancuso

Batavia, New York

The pride of accomplishment of a large and successful local family, and a huge financial stake in the future of their home town, went into the new 1650-seat Mancuso. An investment of nearly $1,000,000.00, and a carté-blanc commission "to produce the finest and best in modern theatres" to the skilled theatre designer, Mike DeAngelis, has given 17,000-populationed Batavia a big, palatial showplace.

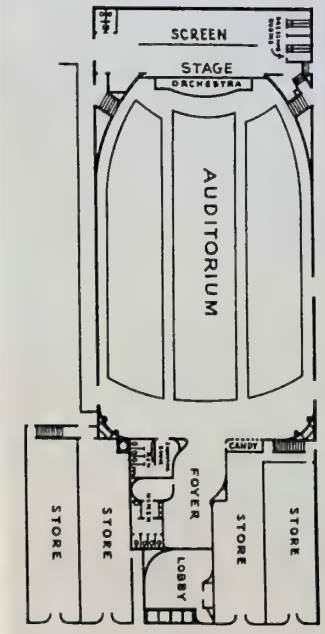
Situated in the main business district of the town, the structure, containing four stores and nine rental offices, occupies a lot which is 120 feet by 250 feet deep. Designed for a combination stage and screen policy which includes name-bands and full stage shows, the equipment includes complete stage facilities and notably a 20-foot mechanical turntable for the quick changing of spectacular presentations. Another feature is the beautifully appointed "private party suite" on the second floor level which boasts of 30 seats and its own lounge and toilet rooms. Richness and luxury seldom seen under today's building costs are the rule.

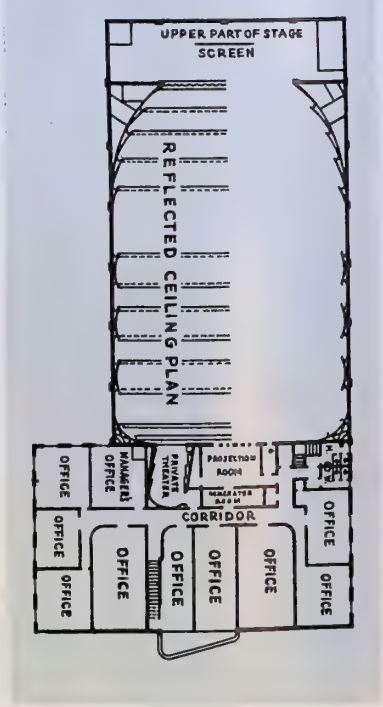
Architecturally, the Mancuso is a fine example of decorative modernism depending on architectural form and on lighting to create a stimulating theatrical atmosphere.

The front of the theatre is of terra cotta in granite, rose, gray and maroon with a large classic figure highlighting the upper right corner.

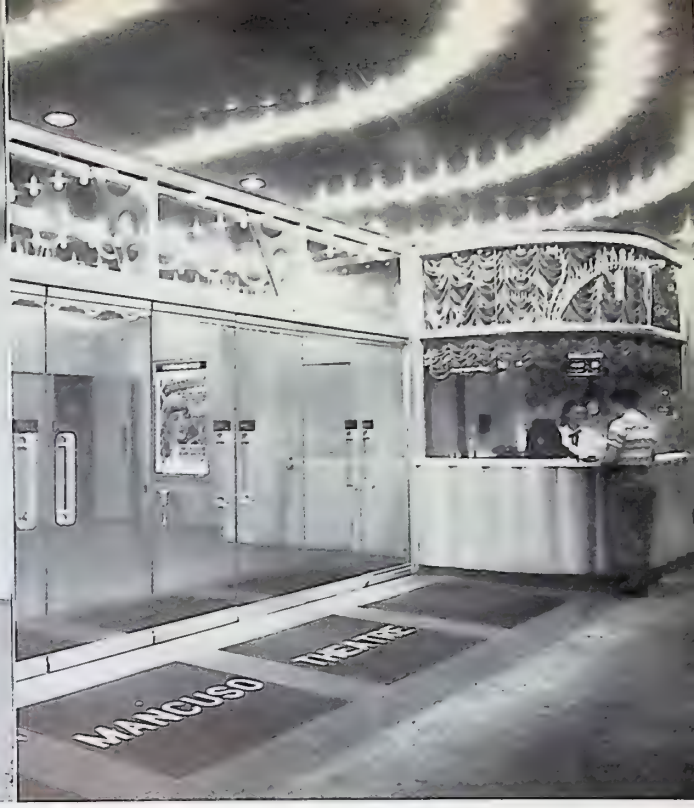
The auditorium treatment is a series of circular planes highlighted by cold cathode strip lights. Rich contour curtains of gold satin and sculptured plaster ornaments accent the spread of the arches and add mammoth size to the bodily comforts of air conditioning and good seating.

Here is a theatre of great beauty and richness, of which all should be proud who had any part in its fulfillment.





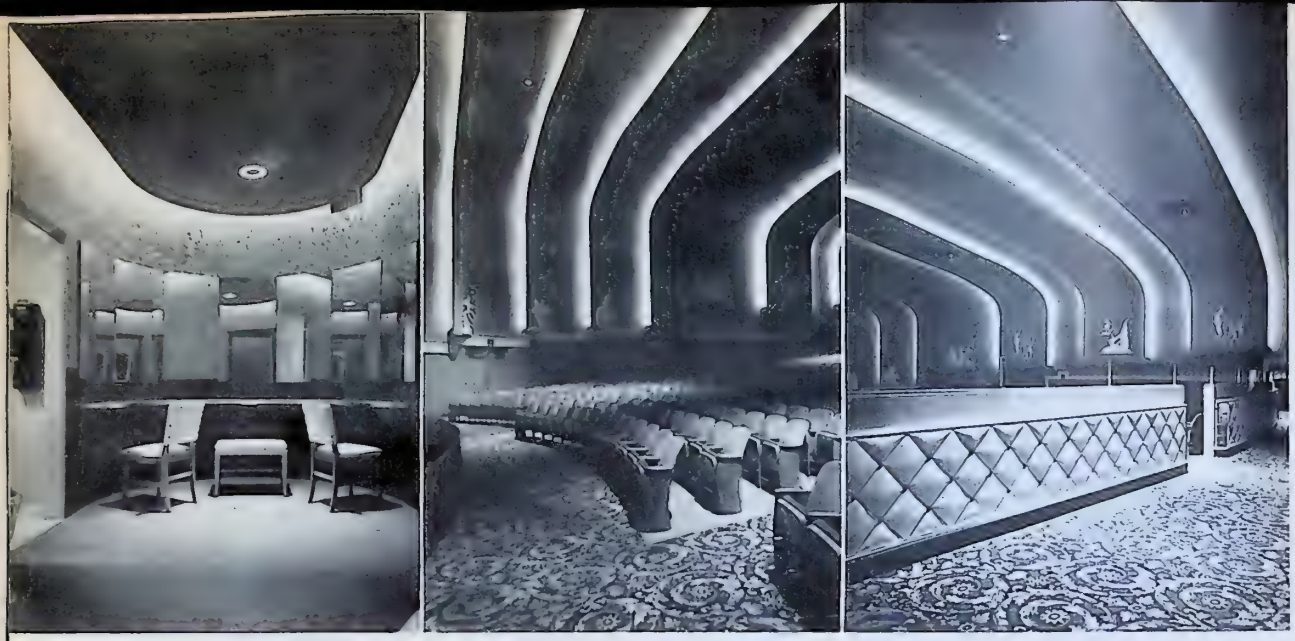




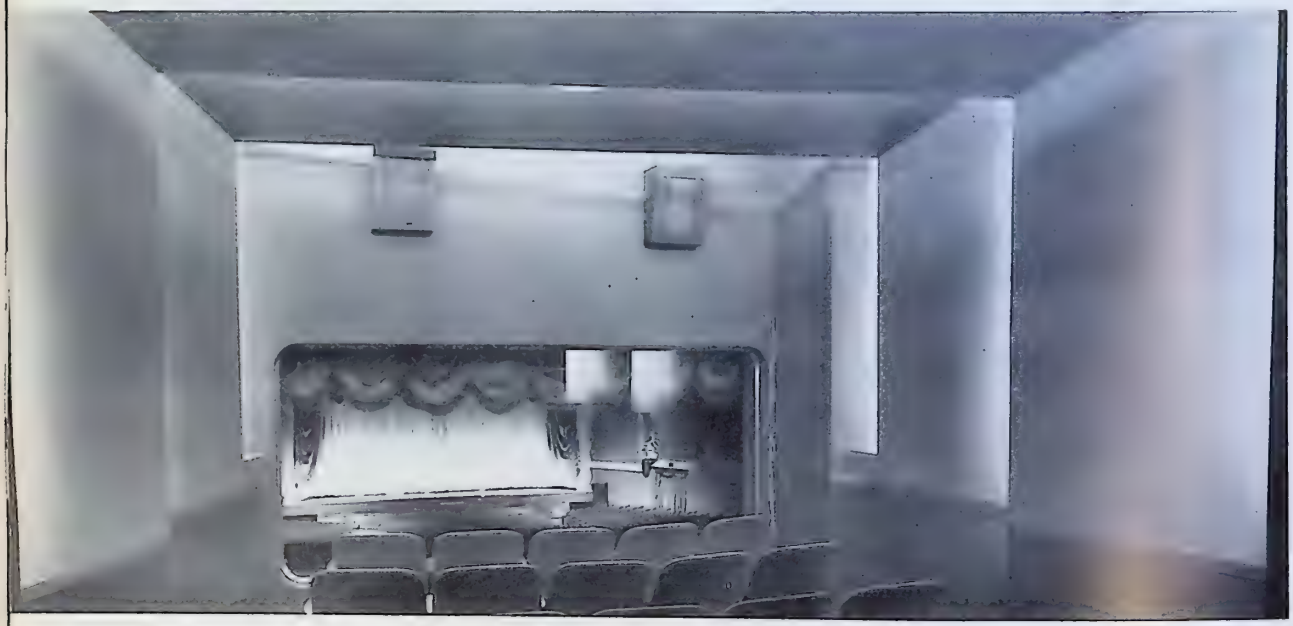
HERCULITE GLASS DOORS and an interesting use of circline fluorescent lamps highlight a lobby of modern distinction. The aluminum corner angles supporting the upper glass sections, and the counter-sunk rubber mats on both sides of the doors, are worthy of note. The boxoffice is a clear expanse of curved glass fitted with Austrian drapes which can be raised and lowered in window-shade fashion. Entrance doors to the inner foyer and auditorium are tastefully sheathed in Formica in tones which contrast to the marble walls of the lobby. The curved walls of the foyer are covered in figured gum wood Flexwood, and lighting is effected through suspended indirect reflection from a gigantic ceiling dome and a series of interlocking squares. A modern wreath patterned carpet, combines to produce an effect of theatrical grandeur.







LOUNGES AND TOILET ROOMS follow the comfort and decorative theme of the rest of the theatre, with dropped-ceiling indirect lighting, ceramic tile and generous wall mirrors. The effectiveness of the auditorium ceiling planes both from a front angle and the standee area, is further highlighted by the classic sculptured art above the dado. Tufted and quilted leatherette, with lighted glass brick inserts at the aisle heads, and an elbow or package recess on top, creates an effective and serviceable standee barrier. And on the second floor level, the "private party suite" boasts of a large plate glass fronted private viewing room, and its own set of toilet and lounge rooms.



REFERENCE DATA

OWNER: Chas. Mancuso & Sons, Inc.

OPERATOR: Mancuso Theatres, Inc.

ARCHITECT: Michael J. DeAngelis.

SEATING CAPACITY: 1,650.

SIZE OF LOT: 120′ x 250′.

ACOUSTICAL MATERIAL: Acoustic Plaster, by U. S. Gypsum Co.

AIR CONDITIONING: by Worthington.

CARPETS: by Bigelow-Sanford Co.

CHAIRS: Bodiform, by American Seating Co.

CHANGEOVERS: Strong "Zipper", by Essannay Electric Mfg. Co.

COINCHANGER: by Johnson Fare Box.

CURTAIN CONTROLS & TRACK: by Vallen, Inc.

DECORATOR: Novelty Scenic Studios.

DISPLAY FRAMES: Aluminex, by Theatre Specialties, Inc.

DRAPERIES & STAGE CURTAINS: by Novelty Scenic Studios, Inc.

GENERATORS: by Hertner Electric Co.

LENSES: by Kollmorgen Optical Corp.

LIGHTING FIXTURES: Cold cathode, indirect, by Hub Electric Co.

PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.

PROJECTION MACHINES: Simplex E-7, by International Projector Corp.

RUBBER MATS: by U. S. Rubber Co.

SCREEN: by Walker-American Corp.

SIGN LETTERS: by Wagner Sign Service, Inc.

STAGE SWITCHBOARD: by Frank Adam Electric Co.

SOUND: Simplex C 75-2, by International Projector Corp.

SUPPLY DEALER: National Theatre Supply Co.

TICKET ISSUING MACHINE: Automaticket, by General Register Corp.



THE REAR AUDITORIUM WALL completes the final recessed light arch, and has a damask covered treated section to assure good acoustics. In this area also is a continuation of the classic sculptured ornamentation, rounding out the decorative theme. The rich fullness of the gold damask contour curtain compliments the pleated folds of the figured damask screen curtain, while the ensemble is confined with a heavy baroque ornamental framing arch that is in key with the auditorium ornament. Unusual in present day theatres, is the Hammond organ and full-sized orchestra pit.





The Woods

Grosse Pointe Woods, Detroit, Michigan

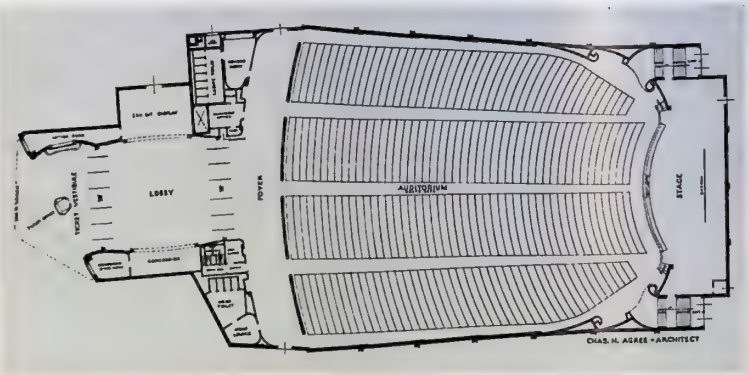
Here is a theatre with many distinctive features—from its towering concave facade to its permanent exhibit space in the main lobby. And with a capacity of 2478, the Woods Theatre finds it advantageous to place all seats on one floor.

The Woods, which cost $650,000 to build and $75,000 to equip, occupies a prominent position on the main road in a growing residential suburb. This location will undoubtedly become even more valuable when the retail shopping center —on the drawing boards in 1948— materializes.

Psychologically the facade is ideal. It is an interesting curved wall of Shawnee limestone decorated with a simple incised line carving. Any tendency toward massiveness is relieved by a line of natural evergreens at the junction of the marquee roof and the facade base. The concave section of stone is flanked by face brick pylons and suggests the influence of the predominant style of residential architecture of this exclusive neighborhood. At night, floodlighting accentuates the unique character of this wall. The walls of the vestibule and display frames are an interesting application of cast granite, granux, highly polished and of contrasting color—pearl gray display frames against the mahogany red of the wall. The entrance wall features a line of plate glass doors in stainless steel frames surmounted by panels of rigidized stainless steel. In the vestibule, the floor is of varicolored tile in a special design.

For the convenience of patrons who drive to the show a paved and lighted parking area for 3000 automobiles is provided. Floodlights on the roof of the theatre augment normal lighting facilities. This parking area is designed to accommodate cars for both the Woods and the shopping center.

The exhibit salon in the main lobby is a unique permanent display area measuring 30 feet wide by 15 feet deep. It is planned to use this space as a focal point of attention to community, neighborhood



and school projects of clubs and youth groups. At times it may be leased to local merchants for displaying the newest fashions, automobiles, or other merchandise. Essentially it provides a community service in attracting local patronage and it may be managed so as to form an important source of income to the theatre operator. Whatever its usage, it has important civic implications. This brief resume will indicate the individual character of the Woods and some of its unique features, several of which are illustrated in the photographs. By all standards a handsome theatre, the Woods has been designed to be an effective and versatile theatre functionally.

REFERENCE DATA

OWNER & OPERATOR: United Detroit Theatres Corp.
ARCHITECT: Charles N. Agree, Inc.
SEATING CAPACITY: 2,478.
COST OF BUILDING: $650,000.
COST OF EQUIPMENT: $75,000.
ACOUSTICAL MATERIAL: Ceiling-sabanite plaster, by U. S. Gypsum Co., rear wall-acoustex by Nat'l Gypsum Products.
AIR CONDITIONING: by Carrier Corp.
CHAIRS: by Heywood-Wakefield Co.
CHANGEOVERS: Thide, by Dowser Mfg. Co.
COINCHANGER: by Brandt Automatic Cashier Co.
CURTAIN CONTROLS & TRACK: by Premier Studios.
DECORATOR: Hanns R. Teichert.
DRAPERIES & STAGE CURTAINS: by Premier Studios.
HEARING AIDES: Telesonic Wireless, by Telesonic Theatrephone Corp.
LENSES: Super snaplight F-1, by Kollmorgen Optical Corp.
LIGHTING FIXTURES: Ornamental plaster, by Walters, indirect cold cathode, by Long Sign Co.
PLUMBING FIXTURES: by Kohler Co.
PROJECTION LAMPS: Peerless Hy Candescent, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Simplex E-7, by International Projector Corp.
REWINDERS: Automatic, by Goldberg Bros.; hand, by Neumade Products Corp.
SCREEN: Walker plastic molded, by Walker-American Corp.
SIGN & MARQUEE: by Long Sign Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: Simplex, by International Projector Corp.
SUPPLY DEALER: National Theatre Supply Co.
TICKET ISSUING MACHINE: Automaticket three unit, by General Register Corp.
VENDING MACHINES: Drincolator.
WALL FABRICS: by Hanns R. Teichert.

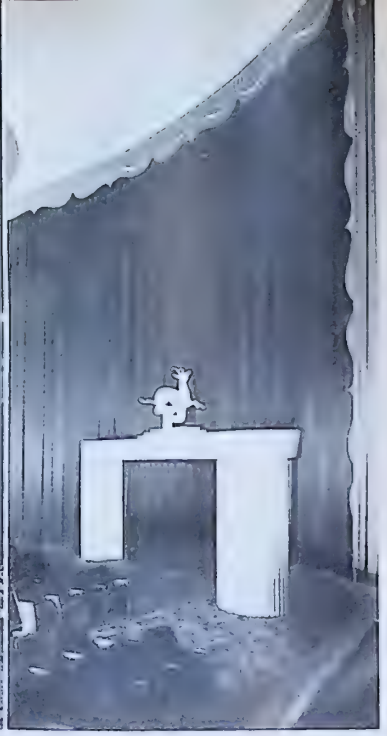




UPPER RIGHT: The auditorium reveals a playful modern treatment of the baroque curve in ornamental plaster, painted "ribbons" and "piecrust" light coves. The ceiling is in dark maroon with two coves in pale yellow lighted by blue, white and red neon on dimmers. Walls are painted in blue with the "ribbon" motif carried in panels. These blend into the deep red drapes across the front. The streamlined seats are in blue mohair.

LOWER RIGHT: The stage is equipped with footlights and provisions for border lights have been made. The plastic mold screen is said to be one of the largest in the area, measuring thirty feet by twenty-six feet. It is planned to cover it with a gold draw curtain.
In both pictures the interesting single floor layout is noticeable. By omitting the conventional balcony, the architect has acquired an unbroken plane along the ceiling in which to create the unusual baroque pattern of combined curves.







ABOVE: On either side of the stage, a bold ornamental plaster arch in pure white marks the rear exits; and a "leaping antelope" statue graces the center over these arches. Left, top: View of the lobby towards confectionery display. This is a twenty-six foot long counter and soft-drink bar under a graceful arch of ornamental plaster suggesting a modern treatment of baroque. A large white ornamental plaster chandelier hangs from the center and plaster light brackets are features on the wall. Center: The standee rail is linoleum covered and is surmounted by a glass partition. Drapes further separate the foyer from the auditorium. Foyer ceiling is pale yellow with large circular light coves combined with air diffuser outlets. Bottom: Display salon in lobby with a special exhibit of children's clothes. Display has been cleverly designed to appeal to both adults and children. Below: The ladies' lounge room has walls of tan stippled macotta (porcelain enameled steel on concrete backing). There is a wide stainless steel counter in front of a full width mirror. The baroque lines of the auditorium are carried into this room.





Colonial influence in twentieth century moving picture house design has sometimes been indirect but it has always been vital and noteworthy. In the Smyrna Theatre of Smyrna, Delaware, building modes more than two centuries old prove their basic validity in a small 600-seat house of unusual beauty. Designed by John J. Zink and F. L. W. Moeble of Baltimore, Maryland, this theatre brings to a progressive community of 10,000 citizens an attractive showplace for the optimum enjoyment of screen entertainment.

The front of the Smyrna is a quiet, dignified, almost ascetic combination of Colonial brick, limestone and terra cotta trim. The brick motif is further elaborated by the use of brick and cinder block walls over a structural steel frame. Cement floors, fabric and plywood walls stress the idea of structural simplicity which serves as an undeviating foundation for the rich artistry of the interior.

In keeping with the rather severe treatment of the exterior, the marquee is relatively small and of conservative design. However, once inside the glass doors, patrons find themselves in a lobby with birch plywood walls, plaster ceiling and terrazzo floor. The environment has begun to change from the emphasized simplicity of the outside to a veritable wealth of decor. Adjoining the lobby is a soda and refreshment shop, with asphalt tile floor and plastered walls relieved by gay mural decorations depicting hunting scenes.

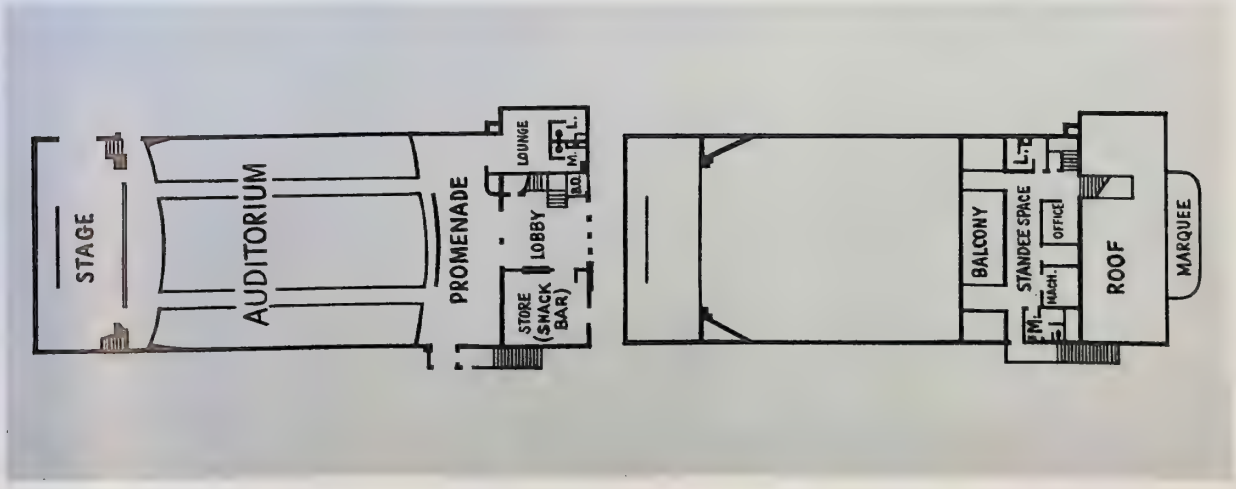
The logical focus of attention is the auditorium where interior decoration transforms the room into a bright, joyous center. Williamsburg green—an authentic Colonial shade—is the color of the fabric on the walls. Over this basic color are superimposed gay designs in lighter colors and even the sidewall indirect lighting becomes an integral part of the design. Large murals on splays near the stage project the ever-present Colonial atmosphere with two interesting harbor scenes, the story of which is probably pertinent to Smyrna, Delaware.

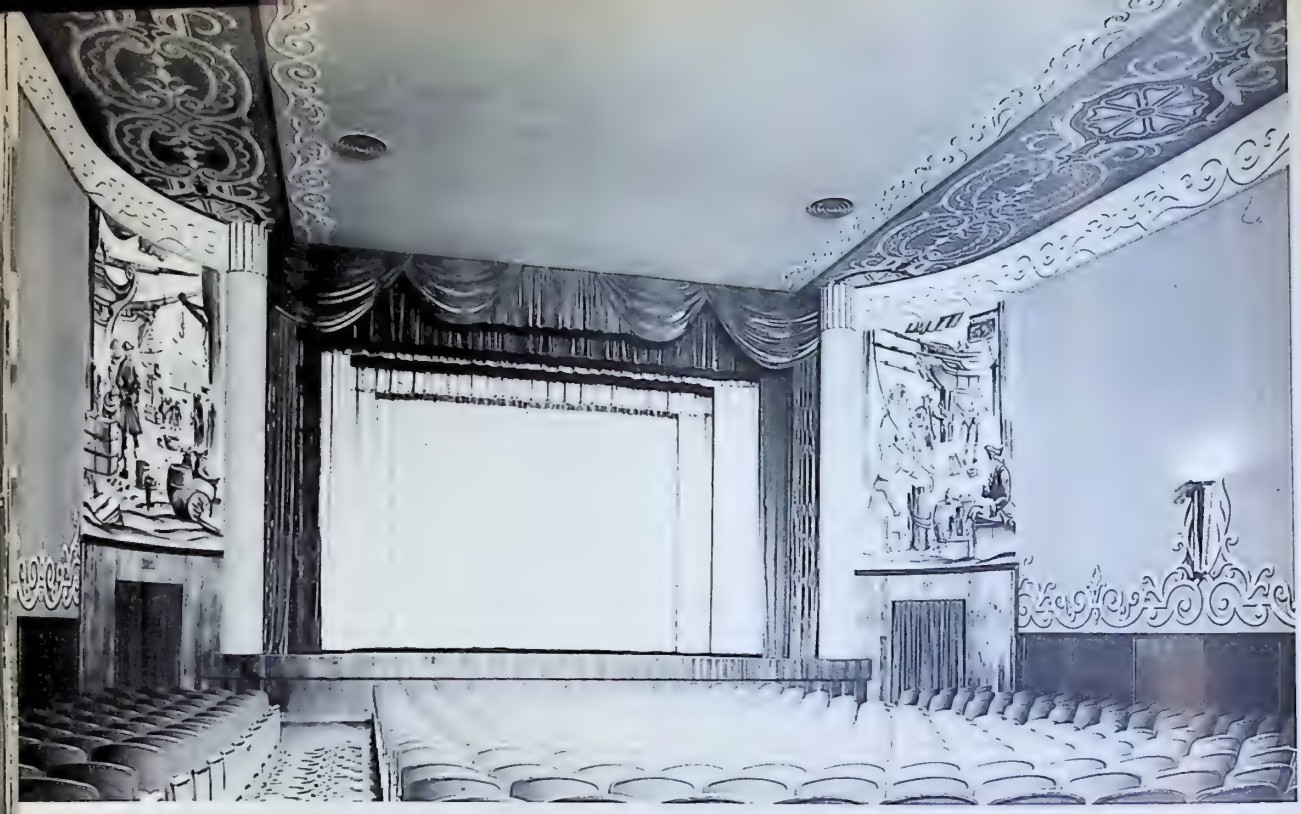
In harmony with the rest of the Smyrna Theatre, the lounge and toilet rooms are finished with plywood walls, plastered ceiling, and concealed lighting.



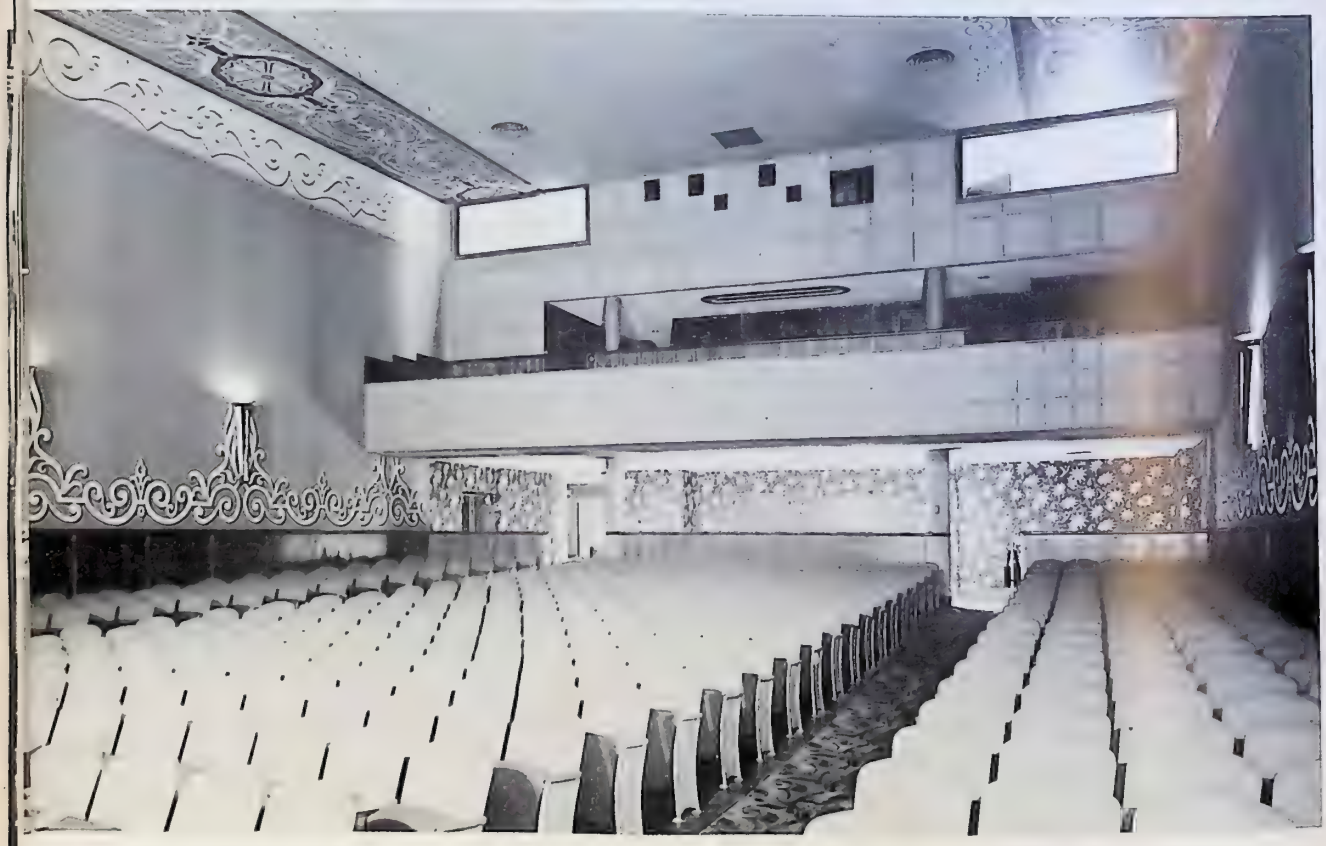
The Smyrna

Smyrna, Delaware





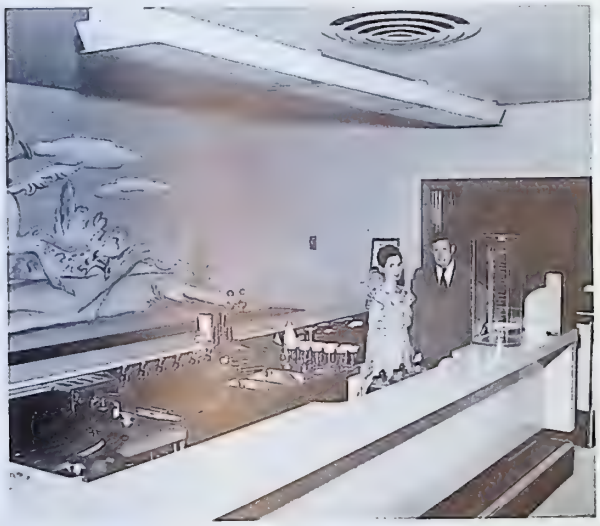
THERE IS A RICHNESS OF DECORATION in this auditorium that completely transports the spectators into a new world. Interest naturally gravitates toward the screen because of the two murals on each side above the forward exit doors which carry out the Colonial theme. Light and dark areas of the stage curtains and draperies create a dramatic effect at the ultimate center of interest. Notice that the pattern of the carpets presents another rich design to complement the design of the ceiling. And in the standee area lush flowers almost overwhelm the senses. Vertical sections in the balcony are treated with fabric tufted in large squares. The integration of auditorium lighting with wall decoration is especially ingenious and, as a result, the lights do not clash with the prevailing decor. At the rear of the room there is no abrupt barrier between standees and spectators —standees may watch the show with little difficulty. The two columns at each end of the central standee area continue through the balcony above. On the same level with the projection room and at each side of the auditorium are the cry room and the Hunt Room for private parties.







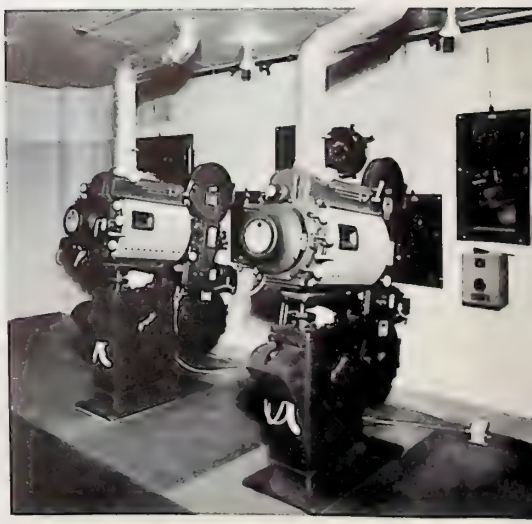
ABOVE: Left—Large friendly paintings on the walls of the cry room of well known Hollywood actors tend to dispel any nervousness or fear that may sometimes spoil the show for the family and surrounding patrons. And there are facilities here for even the very youngest members of the family with comfortable seats for Mother and Dad to keep up with the show.
Right—Here is the Hunt Room, a reserved section on one side of the projection room for private gatherings and special occasions. In 1948, $7.50 reserved the room of fifteen seats for the entire evening. Here is a novel idea and one that may greatly increase the attractive power of the theatre.
CENTER: Left—The soda bar is located in a very strategic spot, just off the lobby. Not only the flow of traffic but also the impeccable appearance would stimulate refreshment sales in any theatre. Even here the mural plays an important part and part of a hunting scene can be glimpsed behind the counter. This installation is really a large-scale adaptation of the familiar candy and popcorn setups found in most American theatres.
Right—View of the refreshment bar from the lobby. An auxiliary candy stand has been erected in the lobby to take care of incoming trade too rushed for time to indulge in a pre-show snack. Tufted leather squares repeat to a certain degree the decor found in the balcony.
BELOW: Super Simplex projection machines insure an excellent show. Notice that in the projection room the designer has again returned to a simple motif and rightly so because here the functional mode predominates.





REFERENCE DATA

OWNER & OPERATOR: G. M. S. Realty Corp.
ARCHITECTS: John J. Zink & F. L. W. Moeble.
SEATING CAPACITY: 600.
SIZE OF LOT: 60' x 130'.
ACOUSTICAL MATERIAL: Sabinite Plaster.
AIR CONDITIONING: by Leopold.
CARPETS: Crestwood, by Alexander Smith & Sons Carpet Co.
CHAIRS: by Heywood-Wakefield Co.
CHANGEOVERS: by Weaver Mfg. Co.
COINCHANGER: by Johnson Fare Box Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: David E. Brodsky Associates.
DISPLAY FRAMES: "Sealuxe", by Universal Corp.
DRAPERIES & STAGE CURTAINS: by David E. Brodsky Associates.
GENERATORS: by Heitner Electric Co.
LENSES: Bausch & Lomb Optical Corp.
LIGHTING FIXTURES: by Consolidated Gas & Electric Co.
PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Super Simplex, by International Projector Corp.
REWINDERS: Simplex Hand, by International Projector Corp.
SCREEN: Walker Plastic Molded, by Walker-American Corp.
SIGN & MARQUEE: Superior Sign Co.
SIGN LETTERS: Bevelite, by Theatre Specialties, Inc.
SOUND: Simplex Four Star, by International Projector Corp.
SUPPLY DEALER: National Theatre Supply Co.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.
TICKET CHOPPER: by GoldE Mfg. Co.
WALL FABRICS: by David E. Brodsky Associates.





REFERENCE DATA

OWNER: Kaufman & Steiner Property.
OPERATOR: Coral Theatre Corp.
ARCHITECTS: John and Drew Eberson.
SEATING CAPACITY: 1,040.
COST OF BUILDING: $275,000.
COST OF EQUIPMENT (including air conditioning): $75,000.
AIR CONDITIONING: by Worthington Pump & Machinery Corp.
CARPETS: by Calvert Rug Co.
CHAIRS: Kroehler Push Back, by Kroehler Mfg. Co.
CHANGEOVERS: by Weaver Mfg. Co.
COINCHANGER: by Johnson Fare Box.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: Novelty Scenic Studios.
DISPLAY FRAMES: by Universal.
DRAPERIES & STAGE CURTAINS: by Novelty Scenic Studios, Inc.
GENERATORS: by Hertner Electric Co.
LENSES: Super Cinephor, by Bausch & Lomb Optical Corp.
PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Simplex, by International Projector Corp.
REWINDERS: by GoldE Mfg. Co.
RUBBER MATS: by U. S. Rubber Co.
SCREEN: Walker Plastic Molded, by Walker-American Corp.
SIGN & MARQUEE: by Continental Sign Co.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: Simplex 4 Star, by International Projector Corp.
SUPPLY DEALER: National Theatre Supply Co.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.

The Coral

Bradbury Heights, Maryland

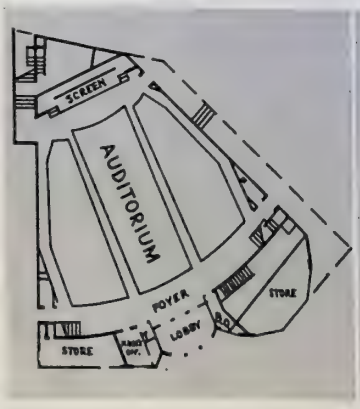
About one mile outside of the District of Columbia line in Bradbury Heights, Maryland, some enterprising business men have constructed a huge recreation and shopping center composed of a ballroom, stores, bowling alleys, generous off-street parking facilities, an impressive plot-plan, and, last but far from least, the beautifully appointed Coral.

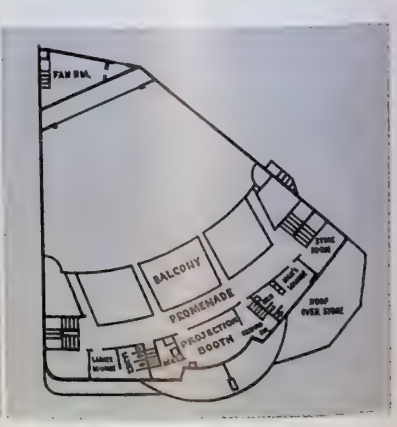
The 1040-seat Coral has a drawing area of over 50,000 and enjoys a 21-day clearance behind downtown Washington first-run theatres for an admission scale of 50 cents.

The front is particularly good. A cast iron stone facade with a huge panel of terrazzo in the form of a submarine mural, the fluted central motif furnishes scale and direction. A large curving marquee of stainless steel with vertical fluted facia runs the full length of the front and provides unlimited display advertising areas.

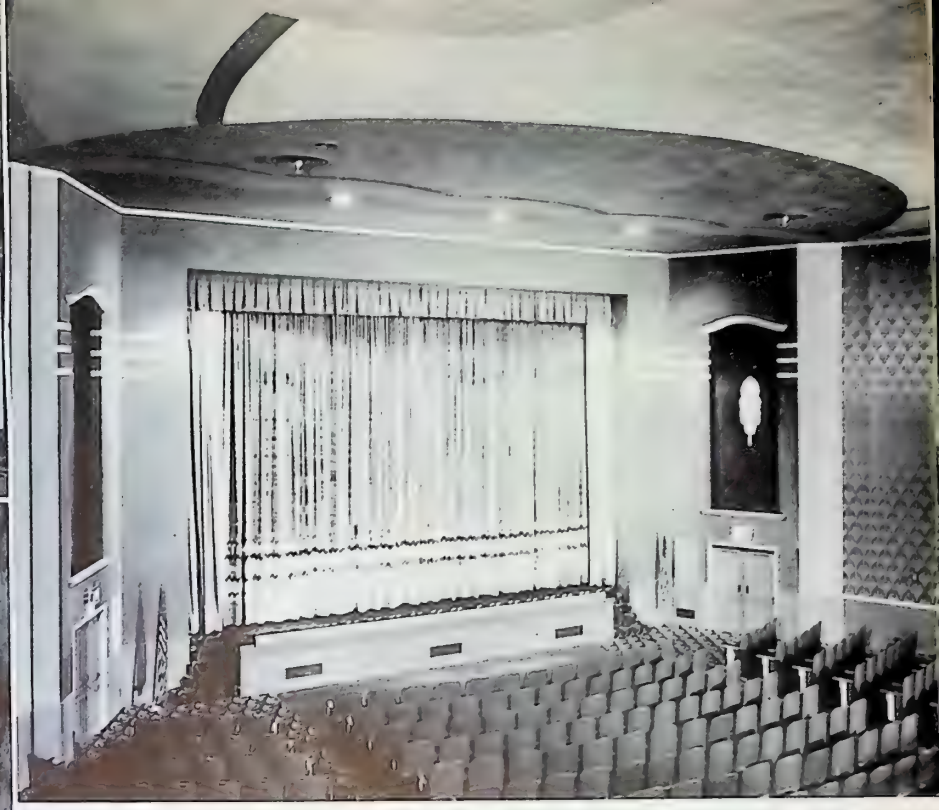
Inlaid Formica doors with modern hardware lead from the outer lobby to the foyer and auditorium. As all lounges and toilet rooms are on the balcony level, only the manager's office and telephone booth open off the foyer which features a modern A.B.C. confection stand.

With 286 seats in the balcony and 761 seats on the main floor, the accent is on comfort and pleasing surroundings. Push-back chairs spaced 36 inches back-to-back, fabric over acoustically treated side and rear walls, lighting through indirect down-lites, carpeted aisles with aisle-lites every fourth row, and modern air conditioning, all contribute to a feeling of comfort and ease that makes for an appreciative audience.



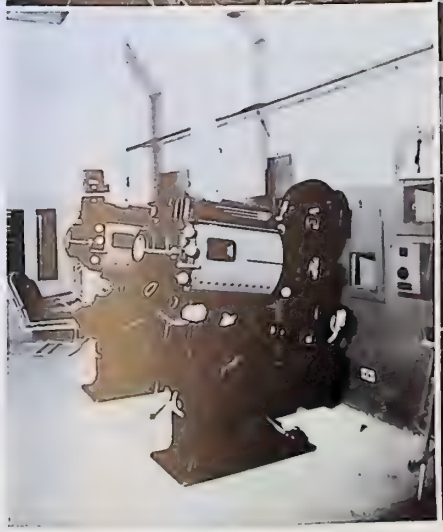








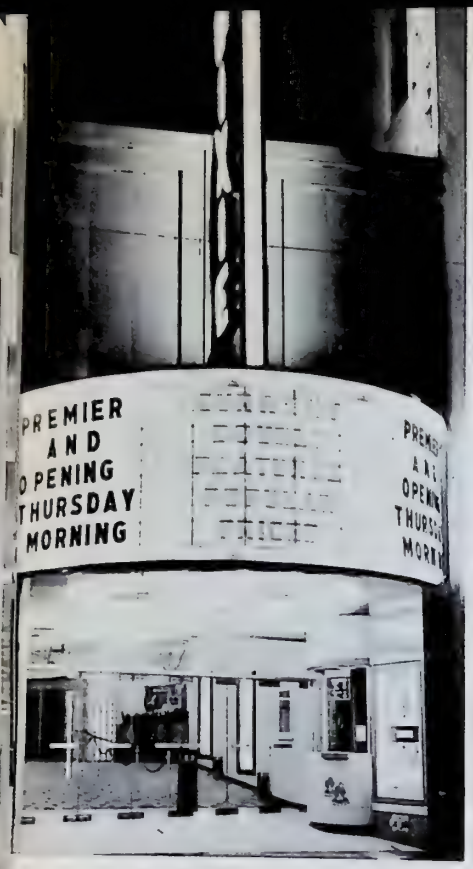
DECORATIVE CHARM is obtained through the use of a lyre design damask in coral and eggshell over the acoustically treated side and rear walls. Stage draperies are of gold crushed plush and green crushed plush, tastefully arranged to convey a feeling of richness and quality. The A.B.C. lobby stand follows the contour of the foyer wall. Ladies' lounge and other service rooms reflect the great attention to detail in patron comforts and furnishings, just as the spacious, high ceilinged, and completely equipped projection booth reflects the thought given to the mechanical excellence of the show. The theatre opened in June, 1948.





The Dixie

Miami, Florida



THE EFFECTIVENESS of large areas of glass and porcelain in producing an impression of inviting bigness can be noted in the above view. The auditorium depends on architectural planes of solid color, and on architectural treatments, for its pleasing modern result.

In the "Winter Playground" area of the southeast, the very modern design and nature of neighboring buildings makes it more or less mandatory to conform to the modern theme, even though a theatre may be intended for the general native population and not particularly for the winter visitors.

This is the case with the 1000-seat Dixie. And even though double-features are the current policy, no effort or money was spared in making it equal to the best in the area.

Situated in a business district, the plot permits only a small frontage. An effect of greater size was therefore necessary and was aided by a circular marquee that is virtually all attraction board. Invitingly recessed back of the building line is a neat circular boxoffice out of the way to one side, and six structural glass doors with glass transoms which open the tastefully appointed lobby to public view. Cold cathode strip lighting starting in the marquee soffit carries into the lobby in decorative effects. The complete facade and under-marquee area is faced with baked enamel-on-steel in coral and pale green.

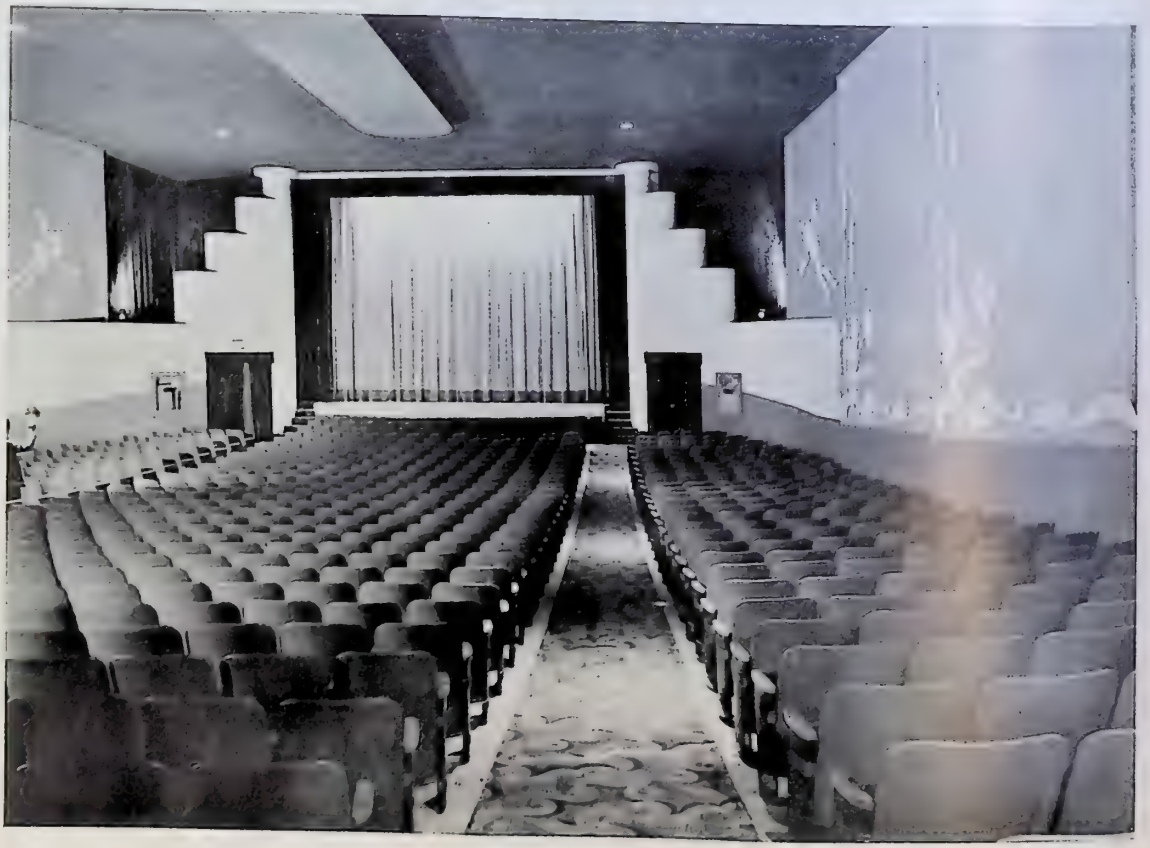
Walls of the lobby have been broken into irregular planes to disguise its straight length, with decorative interest developing from indirect lighting coves and localized murals located at interest points. Two large glass-block pilasters feature the opening into the oval lounge.

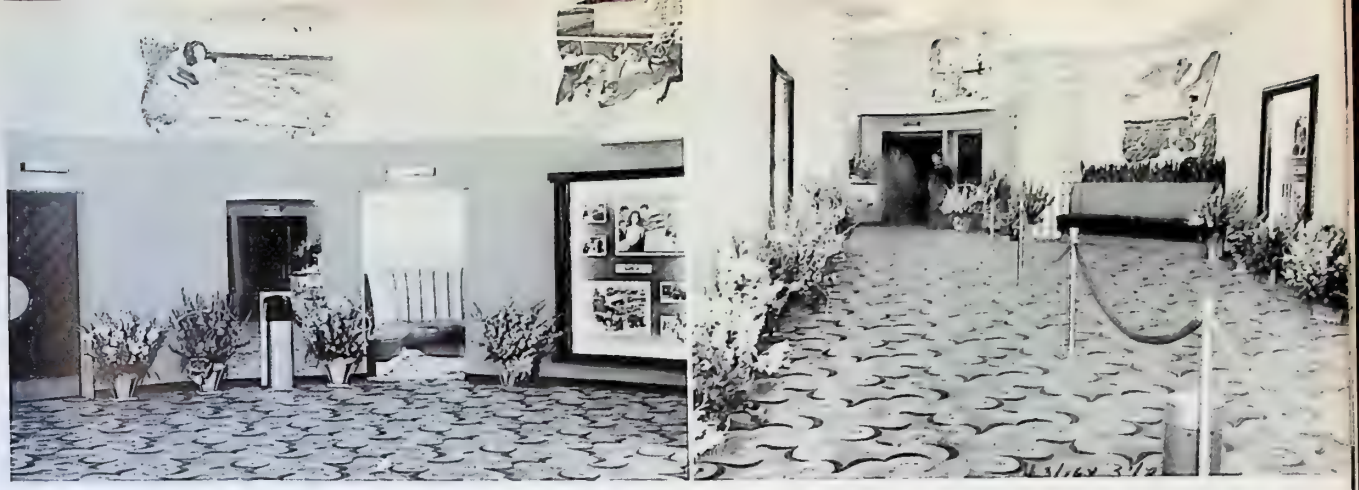
Confectionery sales area is advantageously situated between the doors to the auditorium; and the high-ceilinged lounge continues the mural, cove-lighting and built-in divan treatment of the lobby.

The auditorium is simple and direct with the plaster pylons of the proscenium section directing attention to the screen. The color scheme is coral and turquoise with decorative plaster modern designs in cream applied to the acoustic plaster walls.

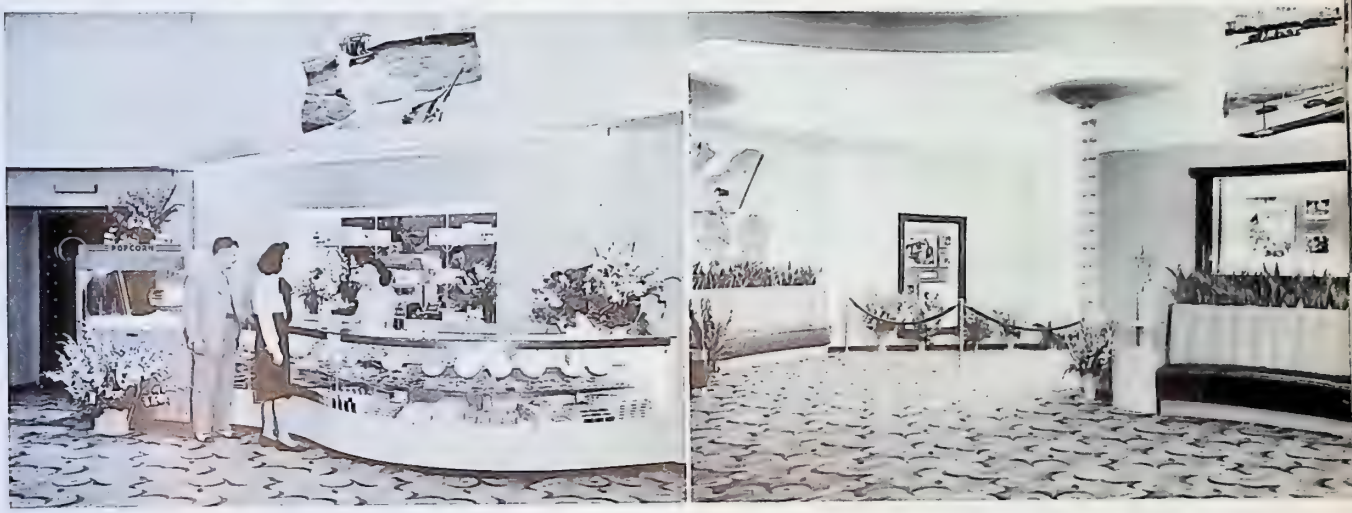
A unique feature of this theatre is the large glass-enclosed deluxe smoking room with a special recessed speaker system and built-in lounging furniture, where, aided by good ventilation, the smoking patron, with or without babies who cry, can relax and enjoy the show.

Bernstein Theatres of Hammond, Indiana, have another theatre to be known as the Little River, currently under construction in Miami.





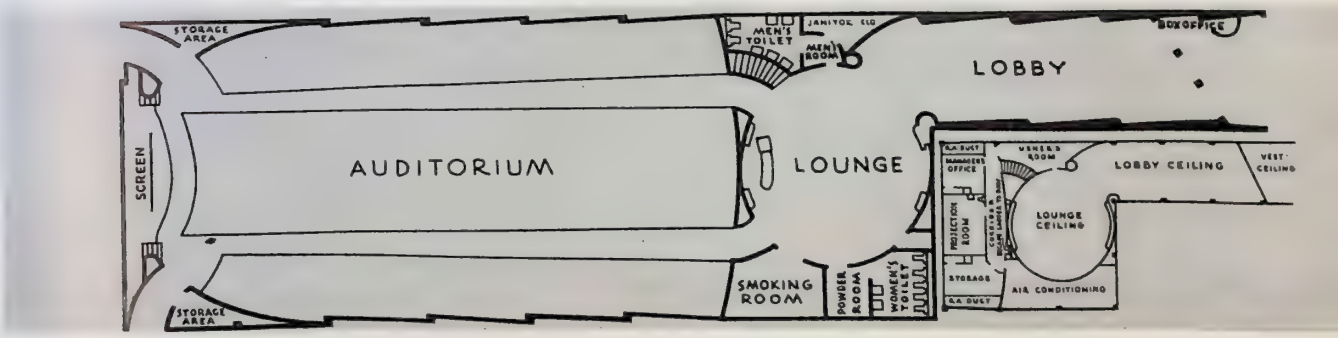
BRIGHT COLORED MURALS with irregular outlines, and themed to the major industry of the surrounding countryside, dominates the decoration of the modern lobby and lounge. Wall-to-wall carpeting in an effective large pattern, built-in leatherette upholstered divans, cove lighting, framed display advertising wall sections and soft curving walls in light tones of coral and turquoise complete the modern treatment.



REFERENCE DATA

OWNER: Bernstein Southern Theatres.

ARCHITECT: R. E. Collins.
SEATING CAPACITY: 1,000.
COST OF BUILDING: $225,000.
COST OF EQUIPMENT (including air conditioning): $60,000.
SIZE OF LOT: 58' x 200'.
ACOUSTICAL MATERIAL: Plaster.
SOUND: by Century Projector Corp.
SUPPLY DEALER: Joe Hornstein, Inc.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.
TICKET CHOPPER: by GoldE Mfg. Co.
AIR CONDITIONING: by Chrysler Corp. (Airtemp Div.).
CARPETS: Gulistan, by A. & M. Karagheusian, Inc.
CHAIRS: Ideal Chief Linecomfort, by Ideal Seating Co.
COINCHANGER: Johnson Lightning Cashier, by Johnson Fare Box Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
SIGN LETERS: Plastic, by Wagner.
DRAPERIES & STAGE CURTAINS: by Joe Hornstein, Inc.
LENSES: Super Cinephor coated, by Bausch & Lomb Optical Corp.
PROJECTION LAMPS: Strong Mogul.
PROJECTION MACHINES: Century "CC", by Century Projector Corp.
RECTIFIERS: by Strong Electric Corp.
REWINDERS: Automatic by GoldE Mfg. Co.
RUBBER MATS: by Perfo Mat & Rubber Co.
SCREEN: by Raytone Screen Co.





REFERENCE DATA

OWNER: Sepper Development Co.
OPERATOR: Fairview Theatre Co. & Associated Theatres.
ARCHITECTS: George & Henry W. Fox, Cleveland, Ohio.
SEATING CAPACITY: 1,800.
COST OF BUILDING: approx. $500,000.
COST OF EQUIPMENT (including air conditioning): $150,000.
CARPETS: by Thomas L. Leedom Co.
CHAIRS: Bodiform, by American Seating Co.
CHANGEOVERS: by Weaver Mfg. Co.
COINCHANGER: by Johnson Fare Box.
DECORATOR: Novelty Scenic Studios.
DISPLAY FRAMES: "Sealuxe", by Universal Corp.
DRAPERIES & STAGE CURTAINS: Novelty Scenic Studios, Inc.
GENERATORS: by Hertner Electric Co.
LENSES: Super Lite treated, by Projection Optics Co., Inc.
LIGHTING FIXTURES: Cathode and neon, by Brilliant Electric Signs, Inc.
PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Simplex E-7, by International Projector Corp.
SCREEN: Walker Plastic Molded, by Walker-American Corp.
SIGN & MARQUEE: by Whiteway Service, Inc.
SIGN LETTERS: Bevelite, by Theatre Specialties, Inc.
SOUND: Simplex 4 star, by International Projector Corp.
SUPPLY DEALER: National Theatre Supply Co.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.
TICKET CHOPPER: by GoldE Mfg. Co.

The Fairview

Fairview Village (Cleveland), Ohio

As an important part of a huge shopping center of 50 stores on two arcades extending from Lorain Avenue to a large parking area in the rear, the 1800-seat Fairview is an impressive example of post-war design and construction materials.

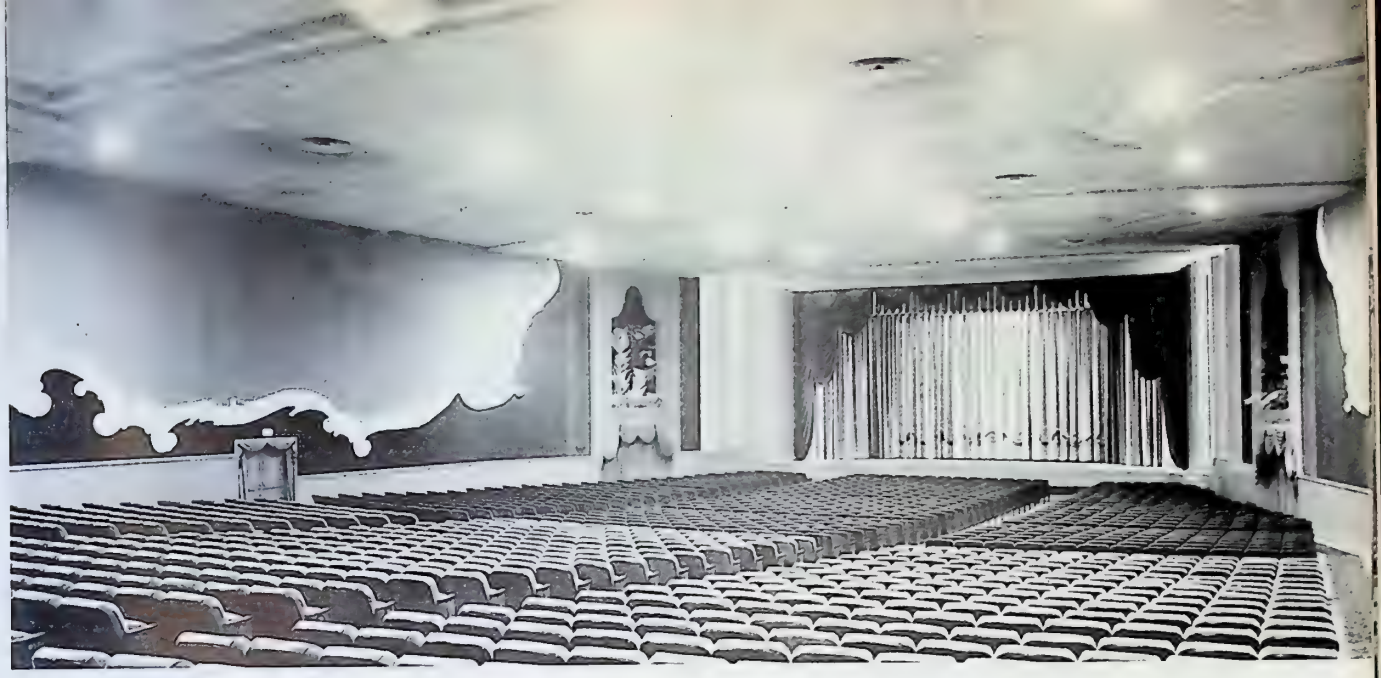
Fairview Village is a residential suburb of Cleveland, Ohio and only 10 miles from that city's Public Square, so that everything relating to the development needed to be in accord with the best in patron demands.

Designed by the Cleveland architectural firm of Fox and Fox for veteran exhibitor Meyer Fine and associates, the Fairview took nearly two years to complete in the face of materials shortages; but shows the results of the large investment and great attention to detail. Luxury is the keynote of both design and appointments. Everything is on a large scale. 90 feet back from the street in a 300-car parking well and with another 1500-car parking area to the rear, there is a car space for every patron. The huge, impressively lighted marquee tops a generous outer lobby in which is centered an octagonal dual boxoffice. Nine full-length, structural glass doors with chromium hardware, lead to an equally generous carpeted inner lobby with simulated marble and mirrored walls, and thence to the strikingly effective foyer.

The 90 feet wide by 200 feet deep auditorium necessary to such a large seating capacity on one floor is scaled to an effect of intimate grandeur through the use of large baroque ornamentation and an oversized draped proscenium. From the fabric sidewalls to the overupholstered chairs, the effect is of luxury and spacious comfort.

GOLD-HEADED NAILS stud leatherette doors in a rich quilted effect. Deep pile, wall to wall carpets in gray, green and red, and simulated marble walls bring into contrast the large advertising display.

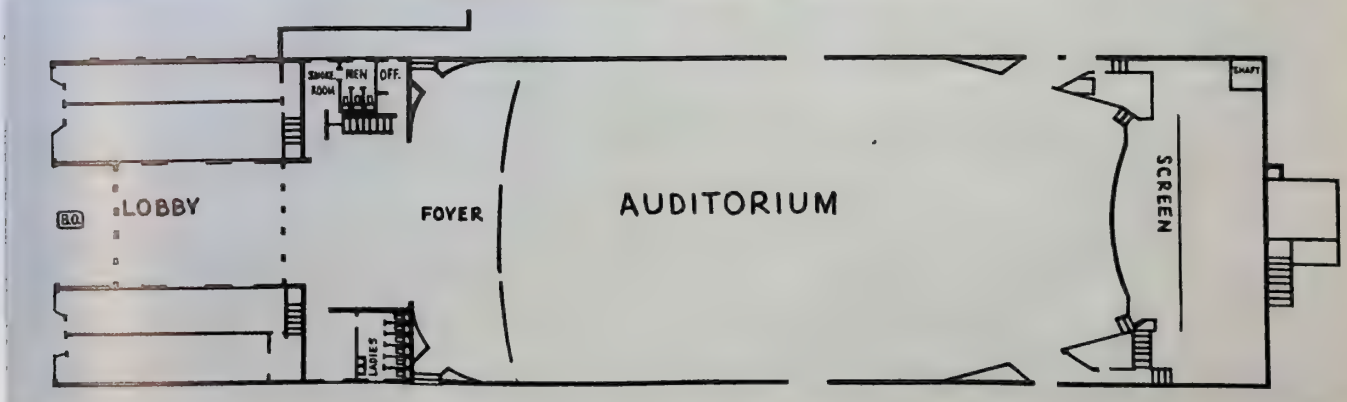




LARGE, BAROQUE PLASTER ORNAMENTATION minimizes the great expanse of fabric covered sidewall and provides the main decorative theme of the auditorium. Decorative panels and heavily draped exits at either side of the proscenium, and stage draperies of rich elegance, complete the effect. Below: The dramatic foyer is highlighted through the use of patent leather quilted wall panels, a large egg-shell built-in divan and the centered 17 feet wide modern candy stand. The ladies' lounge carries out the same feeling of gracious luxury and expensive appointments.









The Helix

La Mesa, California

In both concept and execution this new theatre is radically different.

Deriving its name from Mount Helix which identifies the general region, it is situated in an highly competitive suburb of San Diego. In the immediate area are three exceptionally lush drive-ins and a deluxe neighborhood first run playing day-and-date with downtown. It is the kind of location where a theatre needs to be outstanding in order to attract a discriminating clientele and where an ordinary theatre might suffer by comparison. So the Helix had to be good!

On La Mesa Boulevard at University Avenue, there is a heavy flow of automobile traffic but virtually no pedestrians. Therefore the 45,000 square feet parking lot to accommodate 125 cars, asphaltic covered and landscaped, with easy access and egress to both the main highway and a back street, was of paramount importance.

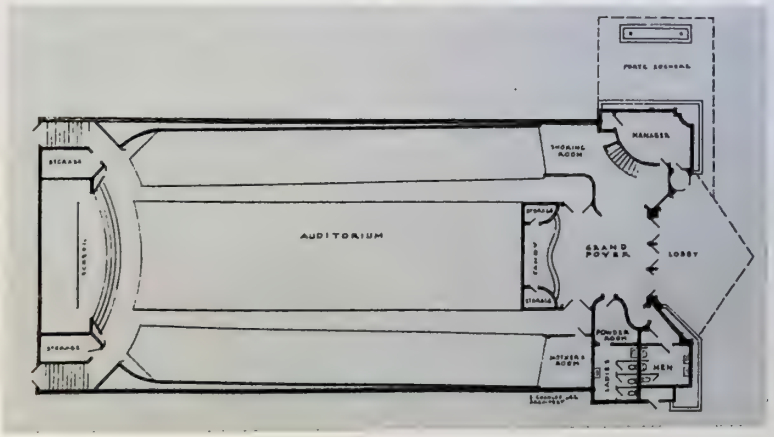
In the building itself, a lot of old tradition and practice was torn up and thrown away. Situated in a mild climate where lighter weight structural methods could endure, a Lamella (wood waffle) roof was mounted on six and one half feet high and ten inch wide reinforced concrete walls which due to the grade elevation produced an inside height of 14 feet at the proscenium wall. As the owners simply state: "All savings in structure were spent at eye level where it would mean something in attracting patrons."

A white lattice panel underset with green neon and with a background of dark green, features the front and sets off the name sign. A waffled copper facia around the canopy of the porte cochere of the entrance drive, is repeated in the boxoffice base, in the main entrance door panels, and in the auditorium dado trim. A Perey turnstile is the modern replacement for the traditional doorman, and the patrons like it!

The interior is as rich and inviting, with the accent on new materials and new concepts. Lacquered squares of salmon colored striated plywood feature the auditorium sidewalls. Plum colored front walls are highlighted with sculptured figures of a theatrical theme tied together with a gigantic strip of film. Black jumbo buttons are used as push-plates on all doors. And a double terrazo drinking fountain boasts of two levels, "for junior and for his mama."

There is plenty of idea value in the Helix!

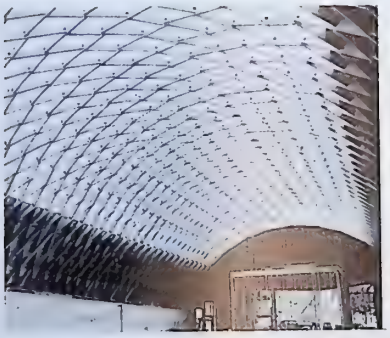
A CARVED PLASTIC BOXOFFICE, a dramatic marquee with neon strips that conform to the lattice idea, and enameled white splayed frame poster cases, set off a front that is sparklingly different. The manager's office is positioned so that he can see both the foyer and parking lot from his desk. There is a well furnished, and beautifully decorated, glass fronted "Monkey Room" off the foyer, where smokers or patrons with small or restless children can enjoy the show without annoying others.



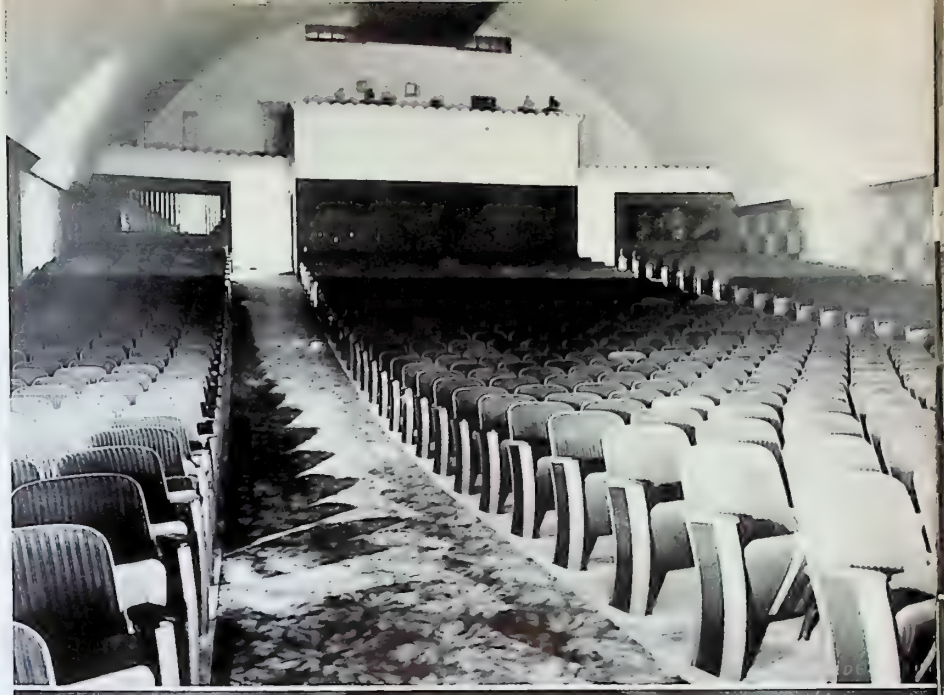


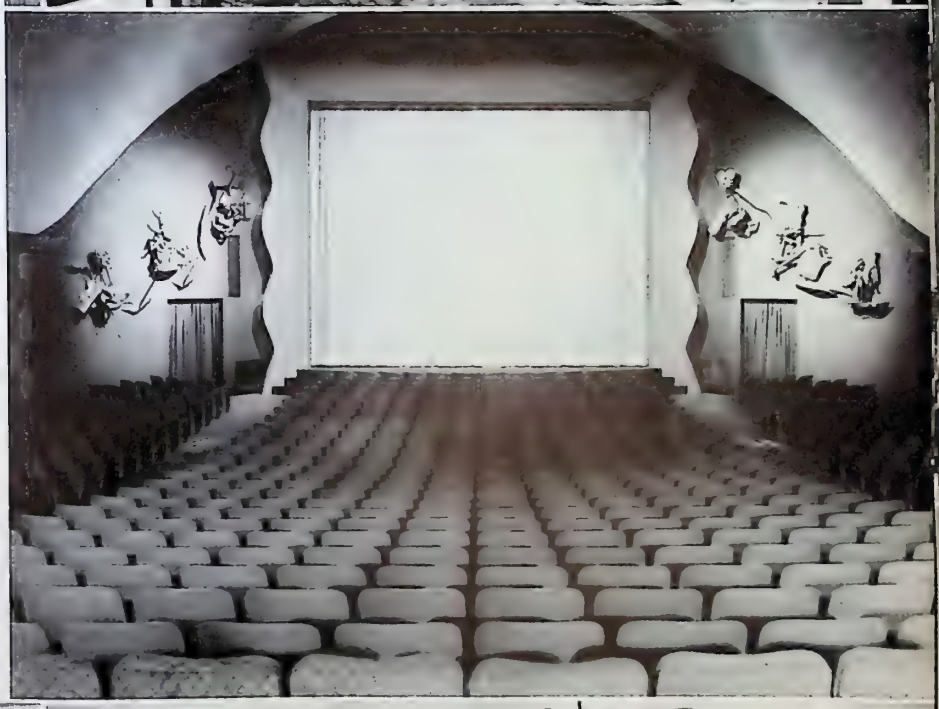
REFERENCE DATA

OWNER & OPERATOR: Blecher and Jones.
ARCHITECT: S. Charles Lee.
SEATING CAPACITY: 825.
ACOUSTICAL MATERIAL: Sprayed limpet asbestos.
CARPETS: by A. & M. Karagheusian Co., Inc.
CHAIRS: by Heywood-Wakefield Co.
CHANGEOVERS: by Weaver Mfg. Co.
DECORATOR (Consultant): Armin Richter.
LIGHTING FIXTURES: Neon and cold cathode, by California Electrical Products.
PROJECTION LAMPS: Peerless Hy Candescent, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Super Simplex, by International Projector Corp.
SIGN & MARQUEE: by B. F. Shearer Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: Super Simplex, by International Projector Corp.
SUPPLY DEALERS: National Theatre Supply Co. and B. F. Shearer Co.
TURNSTILE: by Perey Turnstile Co.



THE LAMELLA ARCH is a series of interlacing diamonds in an interesting pattern. Width of the arch permits a center bank of 14 chairs with two side banks of seven chairs each, for a total of 825 regular chairs plus 154 air-flo loge seats on one floor. Good acoustics are accomplished through one and one-half inch of sprayed limpet asbestos. The splayed frame of the proscenium is repeated on the aisle doors, the main lobby entrance, and the exterior poster cases.













The Lane

Columbus, Ohio

Built as part of an extensive shopping center, this tenth Academy theatre, designed to serve a suburban residential section of Columbus, is of Colonial design.

Constructed of natural local limestone and painted brick, with a coping of Indiana limestone, a copper-roofed cupola topped by a Colonial weather vane adorns its green tile roof. The structural glass boxoffice is also green, and green shutters trim the three display frames. Entrance doors are bone-white to carry out the architectural style.

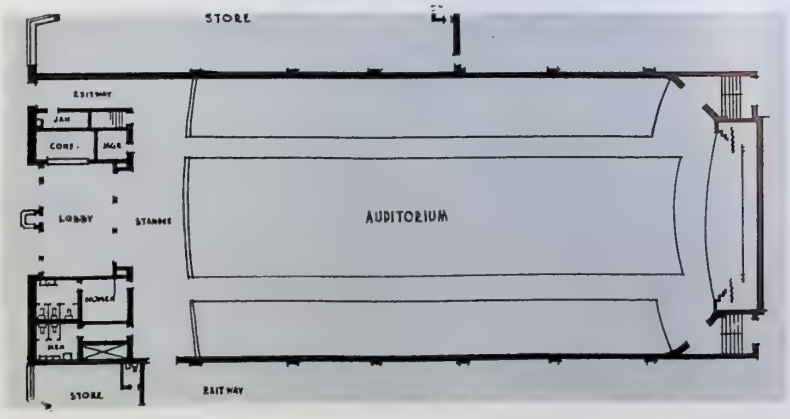
The entrance lobby is floored with Vermont slate flagstone in variegated shades of gray, blue, and wine and has a wainscot of wine topped by bone-white paneled upper walls. Centered in one wall, and accented by a special rubber mat, is a completely equipped confection bar in white against a wine colored recess.

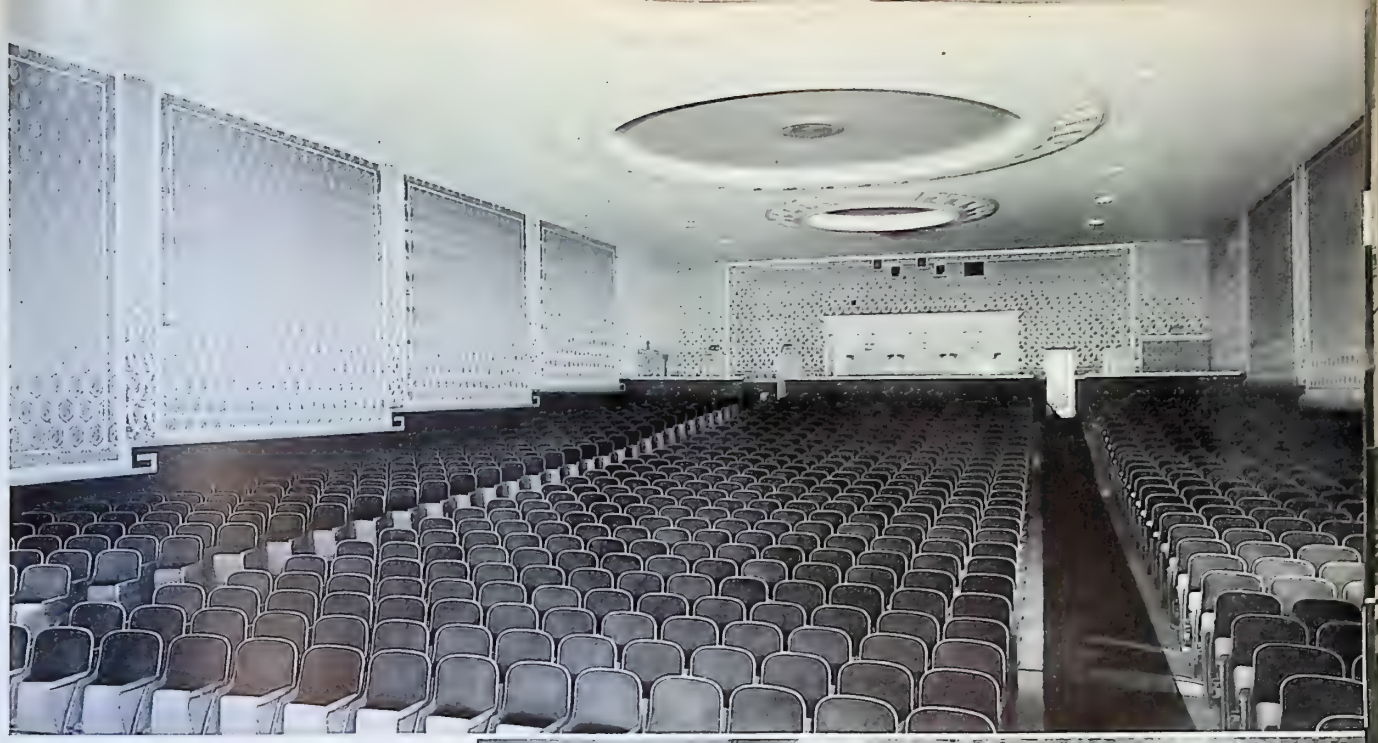
Soft delicate coloring distinguishes the main auditorium. Spun glass fabric in blue and silver plume pattern covers the rear wall, while the same fabric in a gray pattern on the side walls is relieved by four panels of a rose leaf pattern. The auditorium wainscot is Williamsburg blue and the ceiling is peach. Pleated gray spun glass fabric is used to good effect in either side of the proscenium and a golden mellow plush curtain completes the stage.

Three imposing plaster domes of unusual size and painted deep blue with a gray-green ornamental fretwork border highlighted by white and gold, are the ceiling features. Gray slide-back chairs are upholstered in blue. Carpeting is deep-rose with an ebony design.

Due to the shopping center, large parking facilities are available.

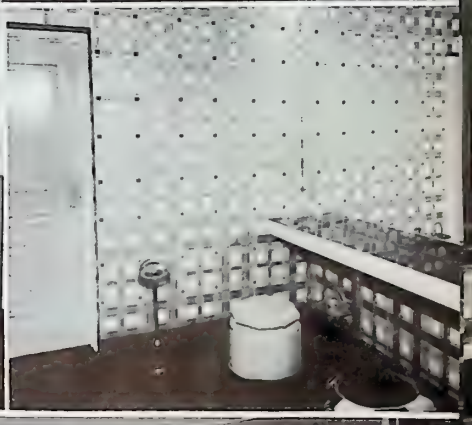


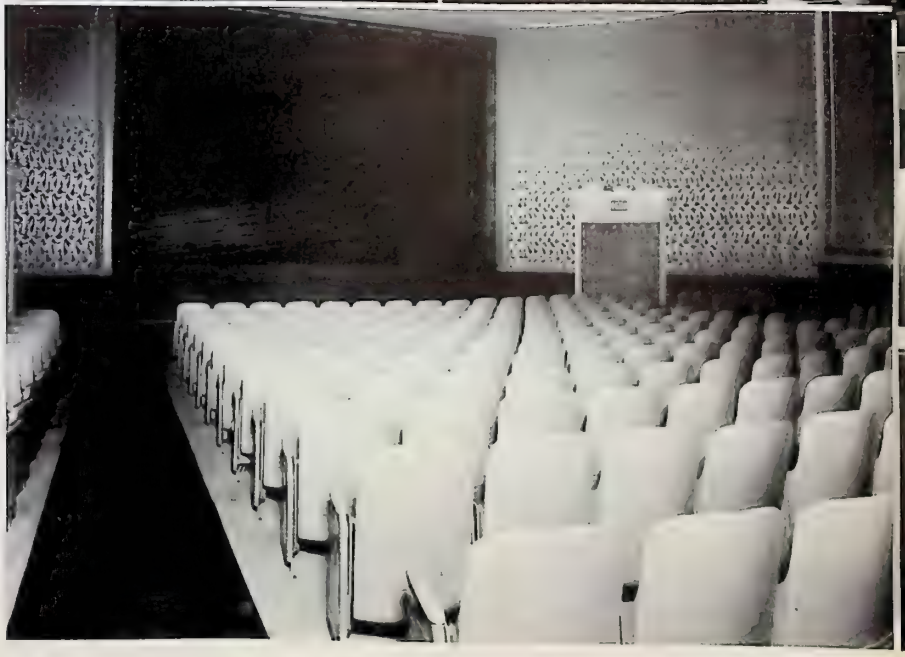




COVE LIGHTING from the three central domes is amplified by parallel lines of down-lites in the auditorium. The effect is simple and direct. Located off the standee area, the ladies' lounge walls are covered with bold, gold-plaid paper. A powder bar, mirrored to the ceiling, extends the entire length of one wall. In the toilet rooms colored tile is used on all wainscots. Upper walls and ceilings are painted.







REFERENCE DATA

OPERATOR: Academy Operating Co.
ARCHITECT: F. & Y. Building Service.
SEATING CAPACITY: 900.
SIZE OF LOT: 120' x 270'.
ACOUSTICAL MATERIAL: Limpet, by Keasebey & Mattison Co.
AIR CONDITIONING: by Fairbanks, Morse & Co.
CARPETS: Pixtred, by Albert Pich.
CHAIRS: by Ideal Seating Co.
CHANGEOVERS: by Weaver Mfg. Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DRAPERIES & STAGE CURTAINS: by Business Boosters Equip.
RECTIFIERS: by Strong Electric Corp.
LENSES: by Kollmorgen Optical Corp.
LIGHTING FIXTURES: by Westinghouse Electric Corp.
PROJECTION LAMPS: Strong Mogul, by Strong Electric Corp.
PROJECTION MACHINES: by Ballantyne Co.
REWINDERS: by Wenzel Mfg. Co.
RUBBER MATS: by Perfo Mat & Rubber Co.
SCREEN: by Raytone Screen Co.
MARQUEE: by Hanover Electric Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: Sound Master, by Ballantyne.
SUPPLY DEALER: American Theatre Equip. Co.
TICKET ISSUING MACHINE: by General Register Corp.
TICKET CHOPPER: by GoldE Mfg. Co.
VENDING MACHINES: Everfrost, by Anderson & Wagner.



The Odeon-Danforth

Toronto, Canada

Another unit in the constantly expanding network of Odeon theatres throughout the Dominion, this steel, brick and reinforced concrete structure occupies a suburban business location on a through cross-town and uptown traffic artery. The drawing population is estimated to be 100,000.

The unusual combination of a shallow street lobby and a marquee which not only extends outward and across the theatre front, but curves diagonally across the lobby itself behind the building line, is used to produce an effect of width and spaciousness. The front is actually only 30 feet wide. Faced in off-tan dressed stone, its features are, the stainless steel boxoffice with chromium trim, the wall insert of patterned brick with black Vitrolite plant bed and dwarf Laurentian pines, and the lighting.

A long and straight entrance passage has been broken into a lobby and foyer with curved partition walls to relieve monotony and to provide service offices and advertising display units. To adjust the floor slope of the auditorium a set of steps lead up from the foyer to a promenade or standee area. Having two levels with 852 seats on the auditorium floor and 478 seats in the balcony, a second level promenade is reached by a grand staircase from the foyer and has its own set of lounge and toilet facilities.

The color scheme of the auditorium is blue green with inset lighting in white and amber-orange. Under the balcony a light trough contains green neon.

Rear of the balcony is faced with acoustic tile, and the balance has built in acoustics through the wall and ceiling design. Carpets are in a leaf pattern of blue and gold. Seats have foam rubber cushions and are upholstered in green and red.

There is no proscenium arch; but a yellow fibreglas grand draw curtain, extending from floor to ceiling with wide swoops and featuring a tropical design in brilliant color, covers the entire proscenium wall. The screen draw curtain and stage drapes are of neutral beige.

REFERENCE DATA

OPERATOR: Odeon Theatres (Canada), Ltd.

ARCHITECT: Jay I. English.

SEATING CAPACITY: 1,330.

ACOUSTICAL MATERIAL (rear of balcony): Acoustile tile.

AIR CONDITIONING: by Chrysler Corp. (Airtemp Division).

CHAIRS: Main Floor, by Interior Hardware Co.; Balcony, by Kroehler Mfg. Co.

COINCHANGER: Johnson Lightning Cashier, by Johnson Fare Box Co.

GENERATORS: Robin Imperial, by J. E. Robin, Inc.

LENSES: by Gaumont-Kalee.

PROJECTION LAMPS: by Gaumont-Kalee.

PROJECTION MACHINES: by Gaumont-Kalee.

REWINDERS: Automatic, by GoldE Mfg. Co.; Hand, by Wenzel Projector Co.

SCREEN: Kalux.

SIGN: by E. L. Ruddy Co.

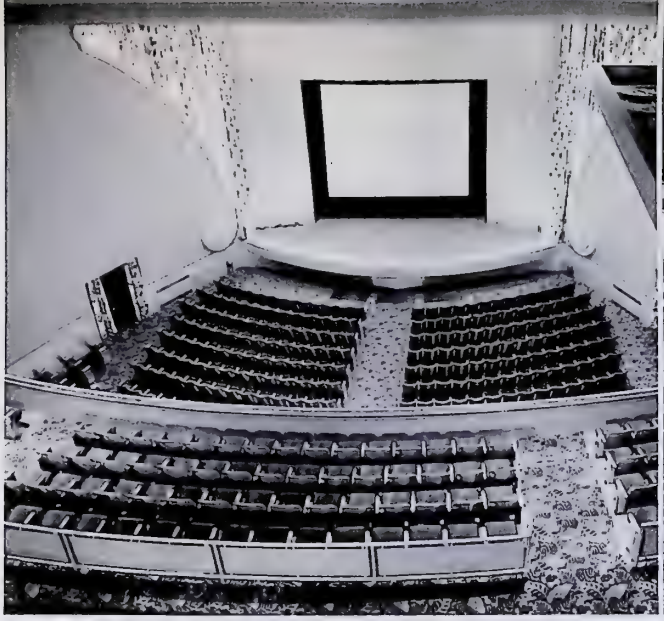
SIGN LETTERS: by Adler Silhouette Letter Co.

SOUND: by Gaumont-Kalee.

TICKET ISSUING MACHINE: by General Register Corp.

FOR TRUE PERSPECTIVE the depth of the street lobby and the result of the marquee indent should be checked against the opposite floor plan. The sign work has theatrical vigor.



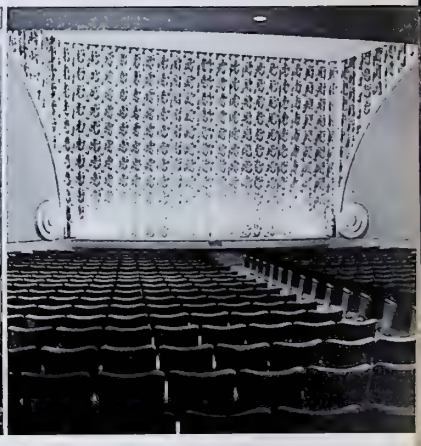


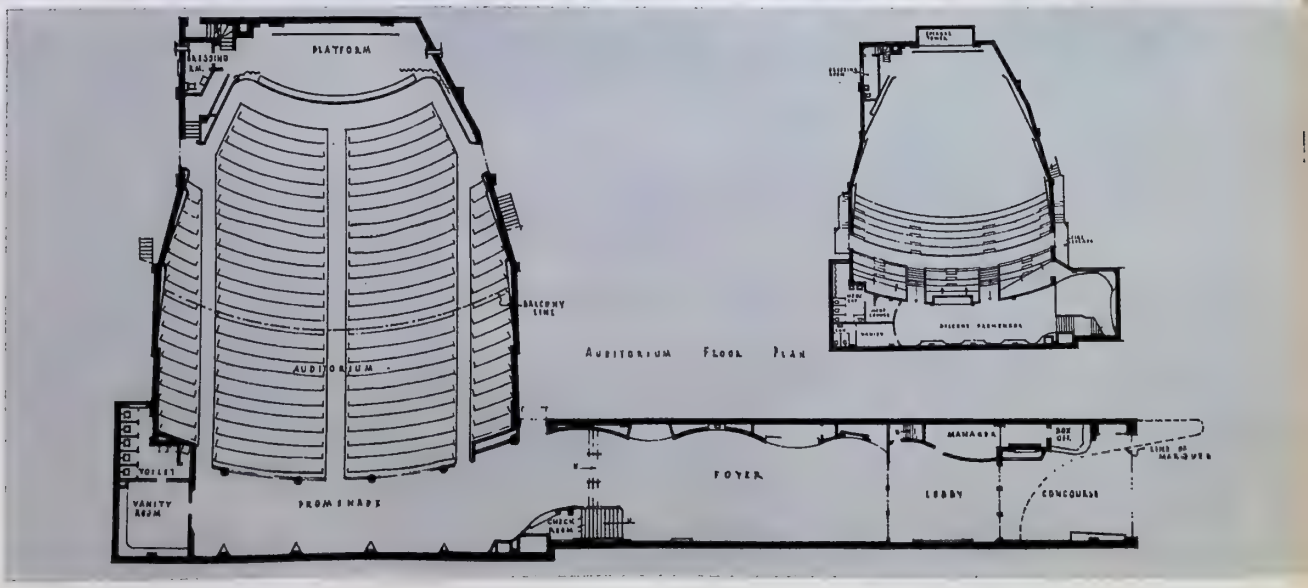


DECORATIVE THEME is simple architectural planes of solid color worked into soft curves and light troughs, with the single ornamental center of interest being the brilliantly figure draped proscenium wall. The two bands of ornamental plaster trim ending in large baroque twists accent the drapery richness. Seating is in four banks served through three aisles which are well lighted for safety through aisle lights in chair end-standards. Emphasis has been placed on leg room with a minimum space between chairs of 34 inches back-to-back.











The Paris

New York City, New York

The lion's share of attention is concentrated on the unique concepts of design embodied in the Paris. Take the subdued auditorium, for example. To quote the architects: "We have purposely refrained from making the effect overstimulating so as not to distract the attention of the audience from the screen." The theatre itself has been designed to serve as a neutral shell with sufficient flexibility to adapt itself perfectly to the mood of the current feature picture. The recessed, incandescent lighting, instead of illuminating the architecture, is designed to dramatize the people and movement within the theatre.

There has been a conscious and highly successful attempt to give the theatre an intimate, personal warmth of a home environment rather than a commercial, public atmosphere. The lounge, for example, has a completely equipped kitchen from which coffee with cream, tea, and bouillon are served. Lounge furniture is of the simple, contemporary design to be found in the modern home.

More aware of visual appeal than is the conventional type of theatre, the Paris has an open well stairway leading to the lounge on a lower level. The lounge, however, can be seen from the lobby and street level by peering down the open well. There is also a window on street level, through which the stairway and lounge can be seen from the outside by passersby who do not actually have to visit the theatre to inspect the interior, but like window-shoppers, can merely glance through the specially provided glass pane.

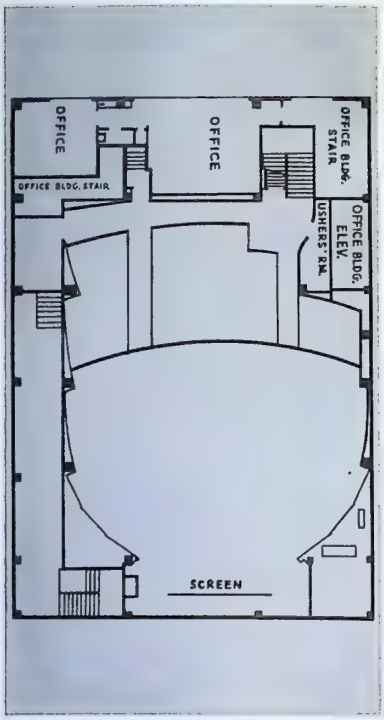
The color scheme of the auditorium is terra cotta, white and steel grey, with a chartreuse curtain. The seats, done in natural birth, are 22 inches wide, and set three feet apart. Capacity of the house is 571.

REFERENCE DATA

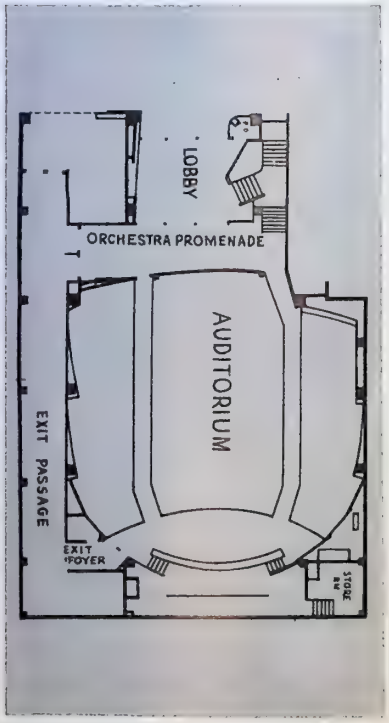
OWNER & OPERATOR: Paris Theatre Corp.
ARCHITECTS: James J. Murno & Warner-Leeds Associates.
SEATING CAPACITY: 571.
COST OF BUILDING: $350,000.
COST OF EQUIPMENT: $30,000.
SIZE OF LOT: 65' x 100'.
ACOUSTICAL MATERIAL: Sani-coustic tile, Fiberglas, Acoustic plaster.
AIR CONDITIONING: by Carrier Corp.
CARPETS: by Thomas L. Leedom Co.
CHAIRS: by International Seat Corp.
CHANGEOVERS: Brenkert, by RCA.
COINCHANGER: by Johnson Fare Box.
CURTAIN CONTROLS & TRACK: by Vallen, Inc.
GENERATORS: by Century Roth.
LENSES: by Kollmorgen Optical Corp.
LIGHTING FIXTURES: by Century Lighting, Inc.
PROJECTION LAMPS: Brenkert Enarc, by RCA.
PROJECTION MACHINES: Brenkert-BX 80, by RCA.
REWINDERS: by Goldberg Bros.
RUBBER MATS: by Lorraine Rubber Co.
SCREEN: Snowhite, by RCA.
SIGN & MARQUEE: by Artkraft Straus.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: PG 230, by RCA.
SUPPLY DEALER: Capitol Motion Picture Supply Corp.
TICKET ISSUING MACHINE: by General Register Corp.
TICKET CHOPPER: by GoldE Mfg. Co.

FRONT IS OF LIMESTONE and marble, stainless steel and aluminum, with herculite glass doors. The specially created marquee faces the Plaza and Fifth Avenue. Comfort for the sitting patron is insured by the use of chair spacing of more than three feet. Both in design and decoration, and in equipment and appurtenances, this is a plush "Park Avenue" outlet for special and foreign films of distinction, that reflects the tastes and demands of its patronage.





TOP: Balcony level plan; and Bottom: Main floor plan. How simplicity can enhance the appeal of an auditorium is evident from the accompanying views. This theatre has been given an honest apparel and patrons will react favorably to this sincerity of purpose. Bottom right view is of the lounge where special miniature of French arts, products and services, in eleven built-in illuminated glass cases is the first exposition of its kind in motion picture theatres.





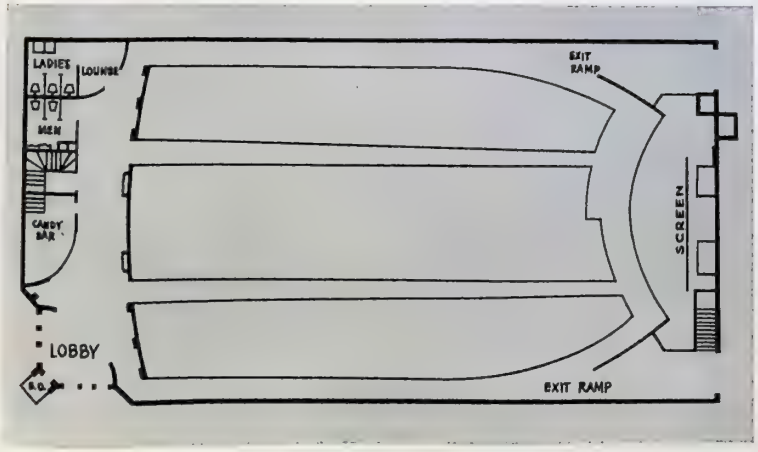






The Lake

Warsaw, Indiana

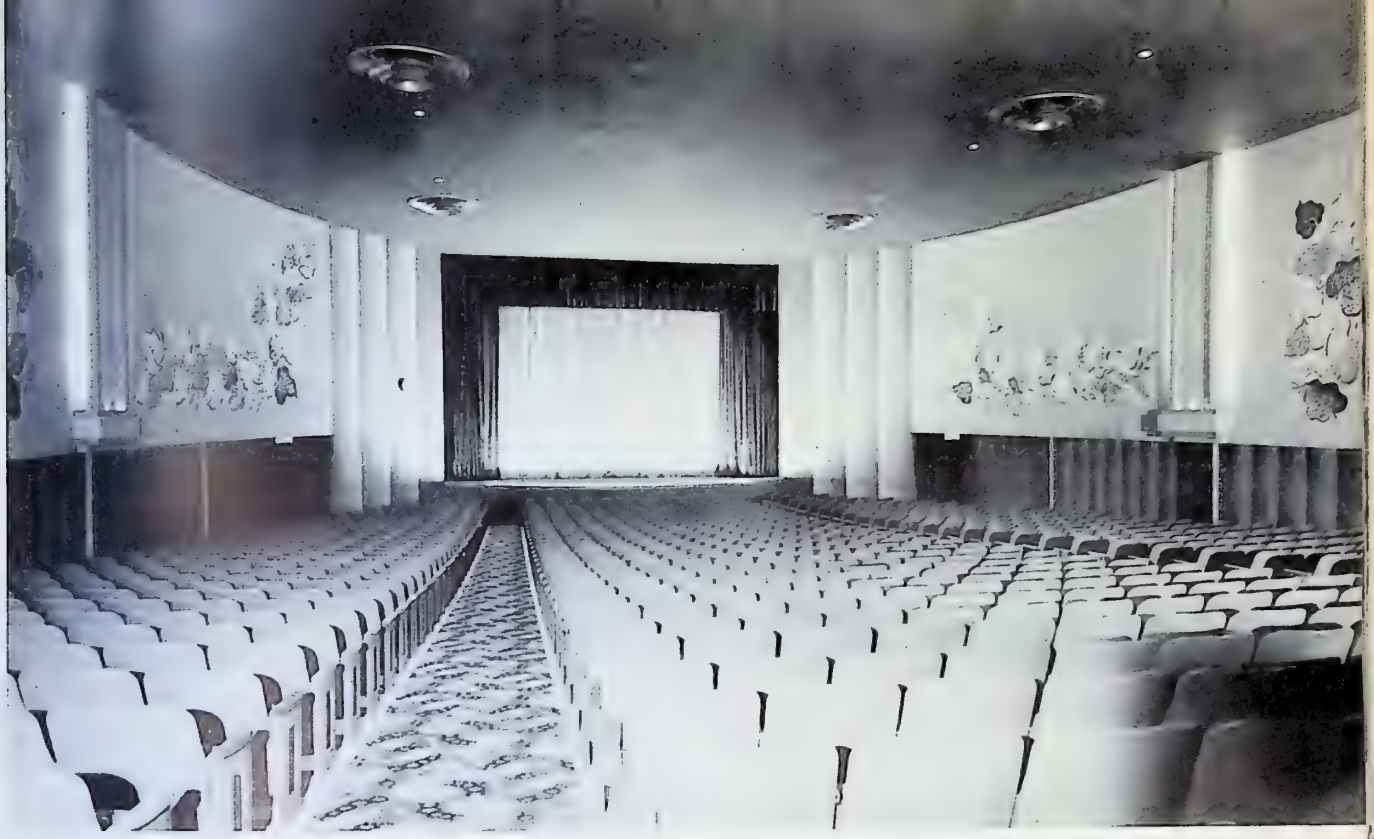


Efficiently modern with no waste of space is this new 908-seat theatre in 7,000-populationed Warsaw. The 6-day operating policy is split into two changes weekly with first-run pictures at an admission scale of 50 cents for adults.

The front is of light brick and granite. A rectangular marquee boasts of good show-selling areas and some 1,600 incandescent bulbs. Four feet high letters channeled with neon top the corner facade. And the entire effect is modern and forceful.

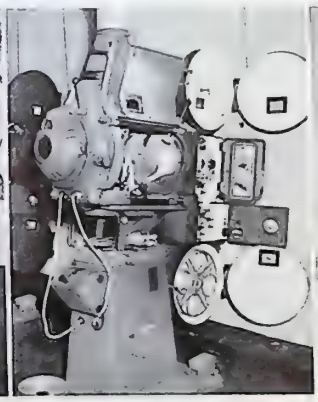
An inviting open lobby leads directly into a foyer promenade painted in shades of blue with indirect lighting of blue and orange fluorescents from dropped ceiling coves. A large mirror panel behind a flower box garden is centered in the standee wall between the aisle heads for no standee area is necessary. Opposite it is a liberal candy bar and entrances to the lounge and toilet rooms.

Above the wainscot, the auditorium walls are broken into maroon sections by a series of cove lighted panels; and each section is individually ornamented with large painted blue and yellow flowers. The seats are upholstered in blue. The carpet is in maroon and blue in a large figured pattern. Columnar effects at the sides of the proscenium set off simple contrasting stage draperies.



THERE IS EFFICIENCY in the simple lines and plain surfaces of the Lake that are relieved by the ornamentation of the side wall sections and panels and by the large figured carpets. And as the floor plan will indicate, the space-inside-the-walls that bears such a high cost-per-cube in the present day market, is used without waste or attempt to awe or impress. The appearance of fluting in the auditorium dado and noticed again in the lobby end-sections and aisle-heads, is painted perspective, for the surfaces themselves are flat. Conditioned air distribution is handled by a series of units interspersed with lights in the ceiling. An ornamental frame has been etched into the mirror wall of the foyer.







REFERENCE DATA

OWNER: Mallers Bros.
OPERATOR: W. E. Hahn.
ARCHITECT: Erwin G. Frederick.
SEATING CAPACITY: 908.
COST OF BUILDING: $184,000.
COST OF EQUIPMENT (including air conditioning): $54,000.
SIZE OF LOT: 66' x 132'.
ACOUSTICAL MATERIAL: Plaster.
AIR CONDITIONING: by Chrysler Corp. (Airtemp Div.)
CARPETS: Ridgefield, by A. & M. Karagheusian Co.
CHAIRS: by Ideal Seating Co.
CHANGEOVERS: Strong "Zipper", by Essannay Electric Mfg. Co.
CURTAIN CONTROLS & TRACK: by Vallen, Inc.
DECORATOR: Tiffin Scenic Studios.
DISPLAY FRAMES: by Universal Corp.
DRAPERIES & STAGE CURTAINS: by Tiffin Scenic Studios.
LENSES: Super Snaplite F 1.9, by Kollmorgen Optical Corp.
PROJECTION LAMPS: Strong Mogul, by Strong Electric Corp.
PROJECTION MACHINES: by Century Projector Corp.
RECTIFIERS: Strong Mogul, by Strong Electric Corp.
REWINDERS: Automatic, by GoldE Mfg. Co.
SCREEN: by Da-Lite Screen Co., Inc.
SIGN & MARQUEE: by Diskey Advertising Co.
SIGN LETTERS: Plastic, by Wagner Sign Service, Inc.
SOUND: by Century Projector Corp.
SUPPLY DEALER: Theatre Equip. Co.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.
VENDING MACHINES: Popcorn by C. Cretors & Co.



The Vogue

Pittsburg, California

A sloping stadium, rising at a sharper angle than the bowl section of the auditorium, permits utilization of the full length of the viewing room. End effect is that of a compact room in which 1131 spectators, even the most distant ones, never feel isolated from the screen or from each other.

This illusion of continuity is furthered by the presence of unusual wall murals. On each side of the auditorium generous portions of panel units portray scenes from the old fairy tale of Cinderella. And to give the paintings even more punch, the new technique of "black light" has enhanced their visual appeal. With these soft glowing reminders of the magic slipper and with neon-lighted coves arranged in parallels on the ceiling, the Vogue auditorium is an ideal environment in which to relax and enjoy the show.

The marquee dominates two streets and makes use of an angular geometrical figure in its design. Above the marquee a two-sided attraction board informs the public of the picture to be seen within; and a slender metal pylon, brightened at night with neon-tube lighting, bears the theatre name in bold letters.

An L-shaped foyer introduces the decorative theme of the auditorium by presenting a colorful carpet and distinctive wall mural treatment. The candy bar is done in Chinese Red Formica with chrome moldings and trim.

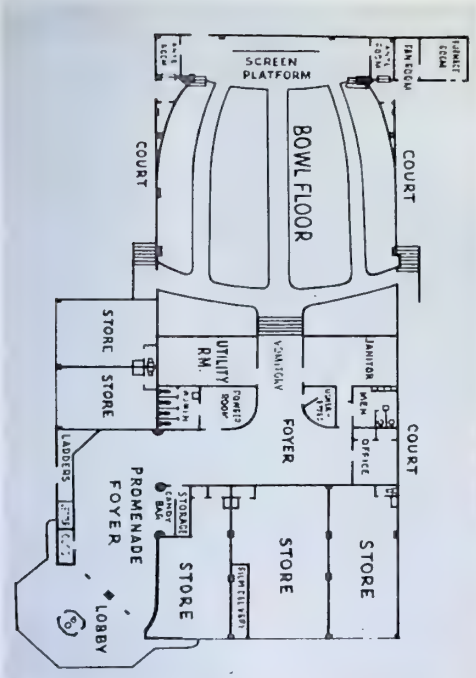
A study of the first floor plan of the Vogue Theatre will reveal its compact nature and the very effective realization of its space possibilities.

REFERENCE DATA

OWNER & OPERATOR: Blumenfeld Theatres.
ARCHITECT: Alexander A. Cantin.
SEATING CAPACITY: 1,171.
CARPETS: by A. & M. Karagheusian, Inc.
CHAIRS: Encore & Air-Flo, by Heywood-Wakefield Co.
CHANGEOVERS: Strong "Zipper", by Essannay Electric Mfg. Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: Design & Decoration Studios.
DRAPERIES & STAGE CURTAINS: by B. F. Shearer Co.
PROJECTION LAMPS: by Motiograph.
PROJECTION MACHINES: by Motiograph, Inc.
RUBBER MATS: by U. S. Rubber Co.
SCREEN: by Da-Lite Screen Co., Inc.
SIGN & MARQUEE: by Cold Cathode Co.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: by Motiograph, Inc.
SUPPLY DEALER: B. F. Shearer Co.
TICKET ISSUING MACHINE: by General Register Corp.
VENDING MACHINES: Popcorn, by C. Cretors & Co.

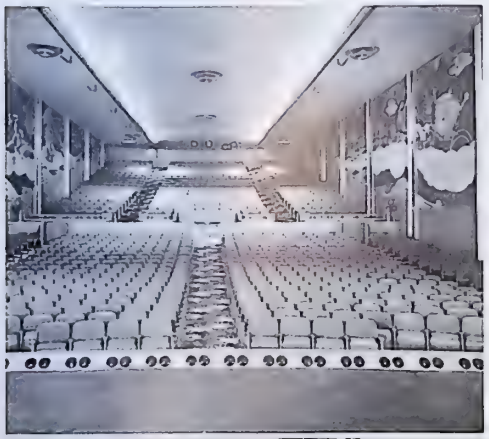
FOYER DECOR sets the pace for the theatre. The bright carpet pattern continues without a break into the auditorium. The wall mural establishes a holiday mood which will be heightened by the Cinderella murals in the auditorium proper. Fluted stainless steel columns add contrast to a wealth of fantasy. All furniture is modern.







THE AUDITORIUM illustrates the spacious design and the unique decorative scheme. Housings of the "black light" equipment can be seen over each mural. Their unobtrusive design allows them to blend in with the ceiling as a part of its decor. Below: another view of the pleasant foyer with another of the unique wall murals. Modern in decor, the wall-to-wall carpeting is in green, while the walls are green and yellow.







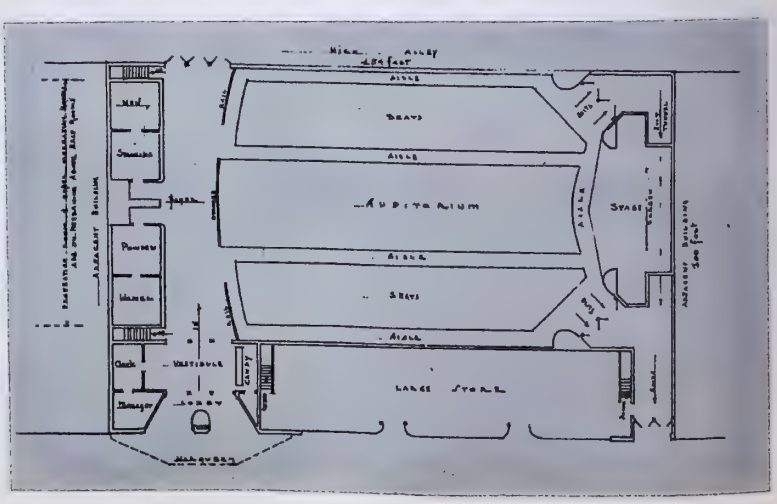


The Manos

Monessen, Pennsylvania

The Manos—namesake and brainchild of Michael M. Manos, president of the Monessen Amusement Company—was a dream come true for the people of Monongahela Valley the night of November 17, 1948. For this handsome theatre, seating 1,500 persons, underscored an old Monessen slogan, "The City Ahead."

Metal dominates the facade. The pylon above the marquee, shaped like a ship's prow, is made of porcelain enamel steel and is said to have been one of the most difficult items in the entire specifications to obtain. The marquee, itself, built at a cost of over $30,000, is made of stainless steel and is considered the most modern of its kind. In fact, Ben F. Poblocki calls it the finest in the 35-year history of his company. There are 3,000 light bulbs in it, 1,150 of which are in the waterfall effect in front. Some 400 are underneath the marquee and 866 are used in the twinkling "Manos" sign.



In the auditorium, eyes are drawn to the beautiful modernistic ceiling in seashell patterns of pastel colors against a warm orange background. Air and light distributors designed by Architect Victor A. Rigaumont contain both the aluminum grille through which conditioned air flows and soft lights which are unobtrusive safety devices. On the floor is a thick





red carpet with pattern in green, gold and black.

In the rear of the auditorium is a floral island constructed of glass block and lighted from behind. In it are planted 25 different species of South American plants. Ivy vines are silhouetted darkly by the soft green light behind the blocks.

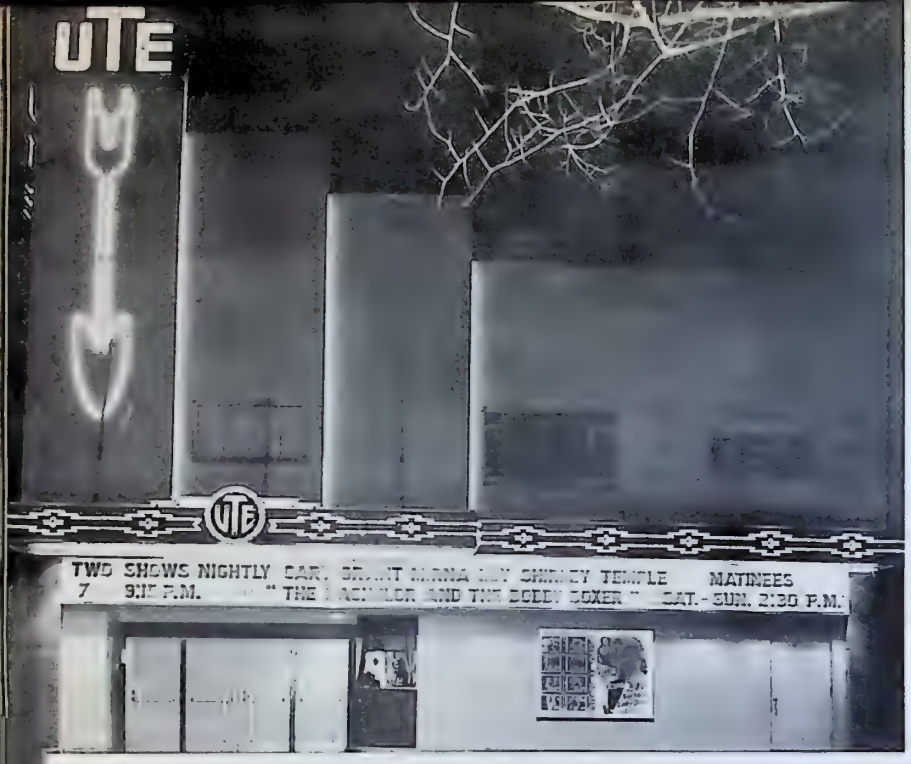
Lounges are located on opposite sides of the floral island. The ladies' lounge is walled with pink pastel tile trimmed with ebony; the ceiling is cream color. Sectional furniture is carefully spaced to avoid crowding and large mirrors are provided.

GLASS BLOCK ISLAND (left above) at the rear of the auditorium makes a unique entrance barrier between the lounge rooms. This auditorium (right) is spacious but because of its design and decorative scheme does not lose the desired "intimate" atmosphere. Notice the design of the proscenium, with repeat trough lighted columns.

REFERENCE DATA

OWNER & OPERATOR: Monessen Amusement Co.
ARCHITECT: Victor A. Rigaumont.
SEATING CAPACITY: 1,250.
COST OF BUILDING (including air conditioning): $350,000.
COST OF EQUIPMENT: $60,000.
SIZE OF LOT: 154' x 100'.
ACOUSTICAL MATERIAL: Rock wool padding on walls.
AIR CONDITIONING: 80 tons, by York.
CARPETS: by Mohawk Carpet Mills.
CHAIRS: Slide-Back, by Ideal Seating Co.
CHANGEOVERS: Strong "Zipper".
COINCHANGER: by Brandt Automatic.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: Haury Decorating Co.
DISPLAY FRAMES: by Poblocki.
DRAPERIES & STAGE CURTAINS: by Mork-Green Studios.
LENSES: by Kollmorgen Optical Corp.
LIGHTING FIXTURES: by Voigt Co.
PROJECTION LAMPS: by Strong.
PROJECTON MACHINES: by Motiograph, Inc.
RECTIFIERS: by Strong Electric Corp.
REWINDERS: Automatic, by GoldE Mfg. Co., hand by Wenzel Projector Co.
RUBBER MATS: by U. S. Rubber Co.
SCREEN: by RCA.
SIGN & MARQUEE: by Poblocki.
SIGN LETTERS: by Wagner.
SOUND: by RCA.
SUPPLY DEALER: Alexander Theatre Supply Co.
TICKET ISSUING MACHINE: by General Register Corp.
WALL FABRICS: by Frankel Associates, Mork-Green Studios.





The Ute

Rifle, Colorado

REFERENCE DATA

OWNER & OPERATOR: Fred Lind.
ARCHITECT: Donald J. Monson.
SEATING CAPACITY: 600.
COST OF BUILDING: $70,000.
COST OF EQUIPMENT: (including air conditioning): $25,000.
SIZE OF LOT: 50' x 125'.
ACOUSTICAL MATERIAL: Alexite plaster and acoustitile.
AIR CONDITIONING: Washed-air with Minneapolis Honeywell Regulators.
CARPETS: Crestwood, by Alexander Smith & Sons Carpet Co.
CHAIRS: by American Seating Co.
CHANGEOVERS: by Weaver Mfg. Co.
CURTAIN CONTROLS & TRACK: by Vallen, Inc.
DECORATOR: Arnold & Savage.
FILM CABINETS: by GoldE Mfg. Co.
LENSES: Snaplite, by Kollmorgen Optical Corp.
LIGHTING FIXTURES: by Neon Maintenance Co.
PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Simplex E-7, by International Projector Corp.
RECTIFIERS: C & C Sixphase, by McColpin-Christie Corp., Ltd.
REWINDERS: by Goldberg Bros.
SCREEN: by Walker-American Corp.
SIGN & MARQUEE: by Neon Maintenance Corp.
SIGN LETTERS: Bevelite, by Theatre Specialties, Inc.
SOUND: Simplex 4 star, by International Projector Corp.
SUPPLY DEALER: National Theatre Supply Co.

Located one block north of the main business street and designed as a first-run commanding a 50 cent admission scale, the building is of fireproof construction with brick pilasters, steel bowstring trusses, concrete floor and clay tile curtain-walls.

Below the large marquee, peach vitrolite glass trimmed with dark red and set off with chromium door hardware and trim on the boxoffice and display frames, projects a modern feeling. A private door to the living quarters is at the extreme right of the building.

A large hour-glass curved foyer provides large spaces for the popcorn and confection area, the manager's office, and the ladies' and men's lounge and toilet rooms, advantageously situated on the main floor. Lime walls with a darker green dado are ornamented with a stencil trim in Indian pattern complementing the carpeting of Indian design in shades of red, blue, green, gold and black.

The walls and ceiling of the auditorium are tinted in rose, with a blue tinted dropped ceiling panel containing the air diffusers and rose and green neon indirect lighting channels. Edgelighted plastic ornamental fixture panels provide a dimmed decorative effect during the show. Large modern painted designs accentuate the proscenium opening where a gold satin screen curtain is framed in royal blue valance and side drapes with gold fringe.

A sound-proof cry-room off the ladies' lounge is fitted with a six-feet high plate glass window commanding good vision, and is equipped with six regular theatre chairs, air conditioning, and a manually adjusted speaker volume control. In this room is also provided space for wheelchairs with a special ramp by which they can be moved safely in and out of the theatre with a minimum effort.

Both the ladies' and men's lounge rooms are equipped with germicidal lamps for greater patron safety. Metal backed tile in pastel colors form high wainscots in the suite, and all walls are painted in contrasting colors.

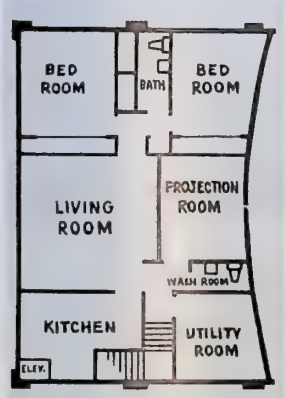
The manager's quarters are built around the projection suite, and provide a large living room, dinette-kitchenette, and two large bedrooms and bath. A small window section and monitor speaker makes it possible to view the show from one of the bedrooms without the knowledge of the audience.

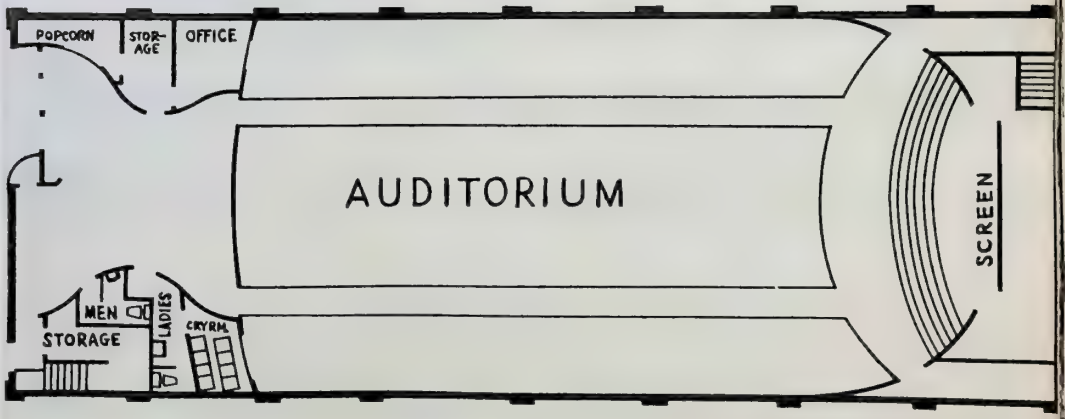






STAGGERED SEATING throughout the center-bank of the auditorium provides good sight lines for the seated patrons. Eccentric shape of the exit doors is carried into the aisle-heads through unbalanced draperies. The auditorium dado is painted in tinted blue to carry out the color treatment of the ceiling. In the view of the foyer, the Indian influence of arrow feathers, and angular over-plaids of the carpet, relieves the straight wall sections. Mirrors above the drinking fountains and on the sides of the necessary support posts provide an opportunity for that last minute "primp" that is so appreciated by the female patron. The built-up tile step under the fountain brings its facilities to the level of the juvenile trade thereby avoiding the later damage resulting from climbing up and hanging to it while using.







The Shoals

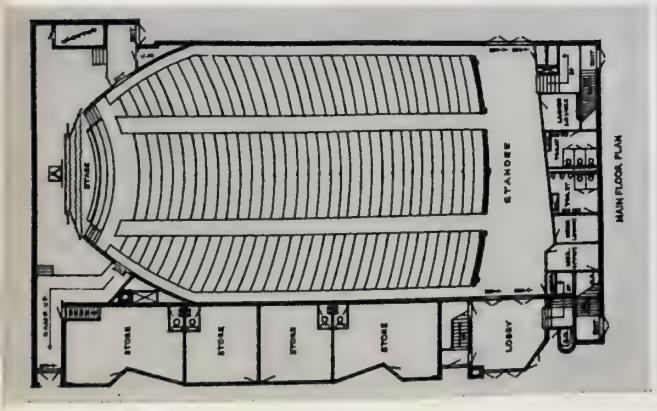
Florence, Alabama

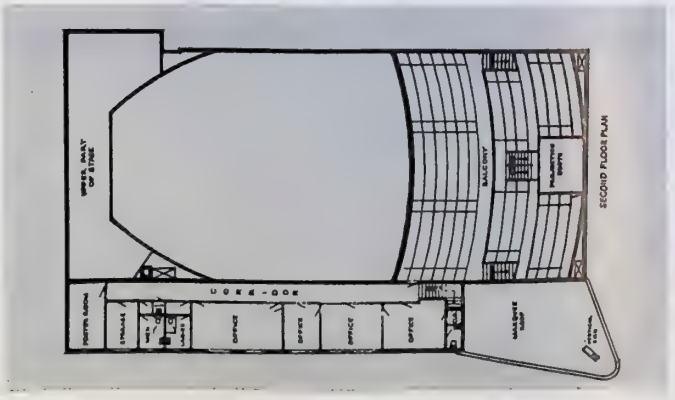
In the downtown business section of Florence, Alabama, stands the fourth largest theatre in the state. The Shoals, which opened October 21, 1948, is owned by a trio partnership—Louis Rosenbaum, Mrs. Tony Sudekum, Stanley Rosenbaum—and operated by Muscle Shoals Theatres. Built at a cost of $300,000 with equipment adding another $100,000 to the bill, the Shoals seats 1344, contains four stores, offers haven on the second floor to the principal offices of the operating company, calls for attention with a prominent V-shaped marquee jutting out at one corner of the building—all this on a compact lot 94 feet by 146 feet.

Over a solid skeleton of structural steel and reinforced concrete, tastefully chosen and combined finishing materials provide an attractive garb. Along the front, the main face is of light tan-colored brick trimmed with limestone and Virginia greenstone. This brick and stone theme is enhanced by an area of satin-finish corrugated aluminum on the exterior walls of the lobby and boxoffice. Here, too, the combination of angles and curves together with the projecting V of the marquee and the vertically cascading lines of the sign produce unusual interest at exactly the location where it is most needed.

The foyer soothes the eye with light green walls, an off-white ceiling with indirect warm white lighting, light coves trimmed in rose and a terrazzo floor with a modern design in two shades of tan. In the auditorium the color scheme consists of varied shades of gray, red, yellow and rose. And the decorative wave-like panels slanting from the ceiling and disappearing behind an eye-level staggered dark area create an illusion of an inverted dome in which screen and spectators form an organic unit.

The lounges are decorated in rose and green, illuminated indirectly with flesh colored neon. Furniture in both lounges is mahogany, trimmed in matching colors of Duran leather. The toilet rooms have floors and walls of ceramic and glazed tile and offer every modern convenience to the patrons.





REFERENCE DATA

OWNERS: Mrs. Tony Sudekum, Louis Rosenbaum, Stanley Rosenbaum.
OPERATOR: Muscle Shoals Theatres.
ARCHITECTS: Marr & Holman.
SEATING CAPACITY: 1,344.
COST OF BUILDING: $300,000.
COST OF EQUIPMENT: (including air conditioning): $100,000.
SIZE OF LOT: 94′ x 146′.
ACOUSTICAL MATERIAL: Kaylite Acoustical Plaster.
AIR CONDITIONING: by Carrier Corp.
CARPETS: Crestwood, by Alexander Smith & Sons Carpet Co.
CHAIRS: by Ideal Seating Co.
CHANGEOVERS: Strong "Zipper", by Essannay Electric Mfg. Co.
COINCHANGER: by Brandt Automatic Cashier Co.
CURTAIN CONTROLS & TRACK: by Vallen, Inc.
DECORATOR: National Decorating Co.
DISPLAY FRAMES: "Sealuxe", by Universal Corp.
DRAPERIES & STAGE CURTAINS: by Hubert Mitchell Industries.
GENERATORS: Transverter, by Hertner Electric Co.
LENSES: by Bausch & Lomb.
PROJECTION LAMPS: Peerless Magnarc, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Century "CC", by Century Projector Corp.
REWINDERS: Automatic, by GoldE Mfg. Co.
RUBBER MATS: by National Products.
SCREEN: Walker PM, by Walker American Corp.
SIGN & MARQUEE: by Balton & Cummings.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: by Century Projector Corp.
SUPPLY DEALERS: Queen Feature Service & National Theatre Supply Co.
TICKET ISSUING MACHINE: by GoldE Mfg. Co.
TICKET CHOPPER: by GoldE Mfg. Co.
VENDING MACHINES: Popcorn by Manley, Inc. and Coca-Cola Cup Vendor.







Upper right: INDIRECT LIGHTING COVES augment the optical illusion produced by slantwise wave panels. Barrier separating standee area from auditorium is formed by closed Venetian Blinds. Middle right: Proscenium is suggested by the ingenious use of illusory wave panels. Lower right: Notice the Venetian Blinds, closed to isolate foyer from auditorium. Below: Mr. Louis Rosenbaum, General Manager of the Shoals.





The Odeon

West Vancouver, B. C., Canada

Although Jay I. English died last year, some of the best contributions to theatre architecture of his fruitful career progressed to their opening during that same period. A tribute to his knowledge of the physical theatre building, he has left his permanent mark on the Canadian scene with some of the superior theatres on the North American continent. This relatively small theatre in West Vancouver is no exception.

Depending on a drawing area of 10,500 retired and business residential neighbors, the theatre plays class pictures on single bills that change twice weekly at a top admission scale of 50 cents for adults, 30 cents for students, and 20 cents for children.

Constructed of reinforced concrete and steel, and classified as "slow burning", the front is faced with medium gray hammered local stone, with sections of light colored stucco and of glass. A canopy marquee with attraction board facia forms part of the accent trim of the entire building, and is surmounted by a stone tower topped with neon outlined letters spelling out the theatre name. A small confectionary store worked into the front and backing the theatre's interior counter is certain to increase that "extra profits" feature. Aluminum counter-sunk display frames are advantageously placed near the entrance doors, and near the confectionary store window.

The terrazzo floored lobby features a series of view windows overlooking a lattice-covered patio which will be impressively planted and lighted. Hammered rock is carried inside to form an effective decorative treatment around the ticket counter. The rosy purple plastered and carpeted foyer gives access to the various lounge and toilet rooms and is furnished in modern manner.

The auditorium is virtually devoid of ornamentation except for the accent of the flaired front wall framing the stage draperies. Typical of many of the works of Jay I. English, this feature gives lift and dramatic width to the stage opening.

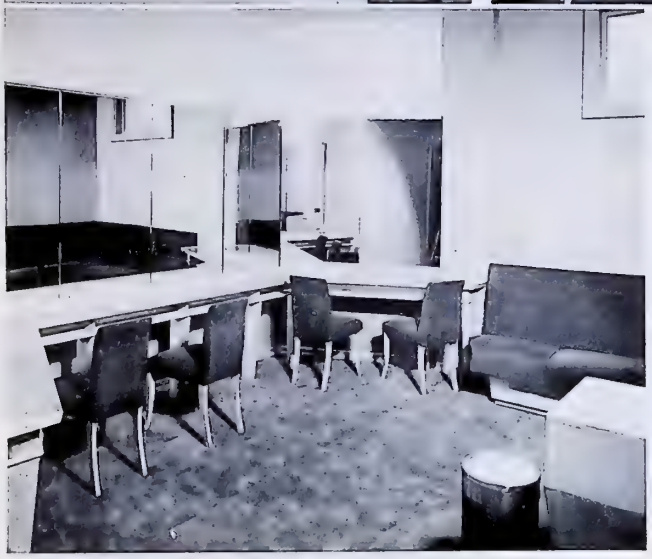
The manner in which the exit doors are painted into the dado is also worthy of note. All lighting throughout the theatre is by means of down-lites that have been mounted flush with the ceilings.

REFERENCE DATA

OWNER & OPERATOR: Odeon Theatres (Canada), Ltd.
ARCHITECT: Jay I. English.
SEATING CAPACITY: 758.
SIZE OF LOT: 92' x 228'.
ACOUSTICAL MATERIAL: Acoustic plaster and fibre glass.
AIR CONDITIONING: by Air Conditioning Engineering.
CARPETS: by Toronto Carpet Co.
CHAIRS: by Interiro Hardware Co.
CHANGEOVERS: by Wenzel Projector Co.
COINCHANGER: Johnson Lightning Cashier, by Johnson Fare Box Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: Crawford Painting & Decorating Co.
GENERATORS: Stabilarc, by Automatic Devices Co.
PROJECTION LAMPS: by C. S. Ashcraft Mfg. Corp.
PROJECTION MACHINES: by Century Projector Corp.
REWINDERS: by Wenzel Projector Co.
SIGN & MARQUEE: by Neon Products of Western Canada, Ltd.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: by Gaumont-Kalee, Ltd.
TICKET ISSUING MACHINE: by General Register Corp.
WALL FABRICS: by Woodwards, Ltd.



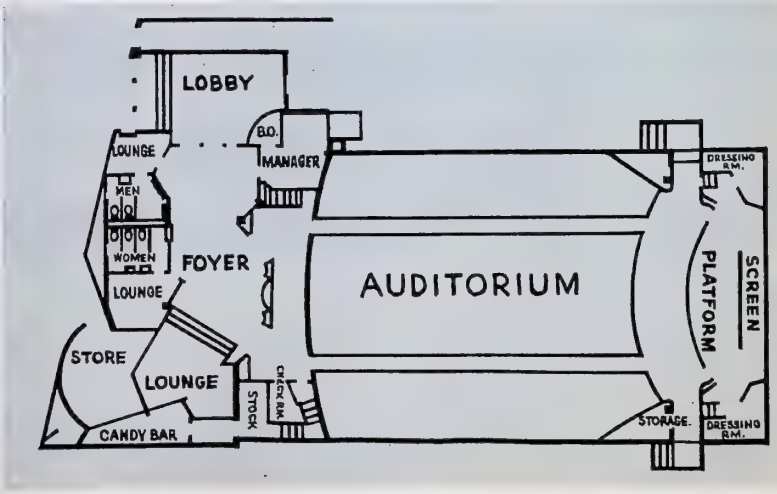






UNUSUAL in its lack of ornamentation, the new Odeon has an enduring quality of attractiveness in its expanses of monotoned pleasing architectural forms. The interior stone work, and ticket counter instead of boxoffice, are refreshing innovations in modern plan; but patron comfort and all luxuries of modern conveniences are never overlooked or neglected. Careful study of the floor plan indicates the manner in which the grand lounge has been used to tie together the theatre's interior confection stand with the store serving the sidewalk passerby.







The Strand

Erie, Pennsylvania

Designed by Architect Victor A. Rigaumont and incorporating his new invention to facilitate theatre traffic, the Strand is one of the most impressive showplaces in Erie, Pennsylvania.

The 977-seat theatre was built at a cost of $220,000 on a lot 53 feet wide and 163 feet long. Equipment cost an additional $60,000. Located in the downtown theatre belt and shopping district, the Strand is eminently qualified to present moving picture shows with highest quality sight and sound.

The theatre's front is not elaborate in the ordinary sense of the word, but the rectangular shape of the facade has been cleverly exploited to obtain maximum attention from the passerby; and this is, after all, the primary function of the theatre front. Above the marquee, which is constructed of enameled steel, cream color face brick has been artistically worked into a design based mainly on concentric squares. Otherwise the bricks are laid conventionally with alternate rows of long and short sides giving the wall a character all its own.

The bifurcated attraction board utilizes exposed electric light bulbs with a central bank of lights and tubes passing from the marquee directly into the theatre lobby in a continuous decorative band which directionally illuminates the entrance area at night. In fact, this special bank of lights replaces the normal soffit lighting.

In the Strand auditorium, one of Rigaumont's own inventions has been advantageously utilized. Known as "Bleacher deck for auditorium with recessed traffic separation stairs" (Patent applied for), this invention is essentially a solution to the old problem of handling traffic from two house levels. Here, the occupants of the bleachers are given separate access to stairs and this keeps them from congesting the main floor.

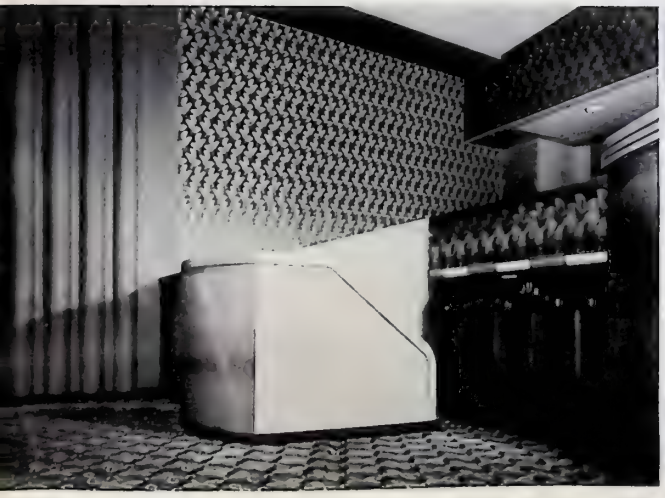
This bleacher design eliminates the direct dumping of the bleacher population into the main floor traffic at spot where it is normally heaviest. It also eliminates steep and dangerous steps. Furthermore, a wide foyer or standee space is available for the exclusive use of the main floor patrons. This type of theatre design is adaptable to either a single admission or a varied admission house.

Spaciousness and modern painted details enrich the appeal of the Strand auditorium. A somewhat intricate sidewall design is balanced by a comparatively simple ceiling design in which another of Architect Rigaumont's inventions—the combined light and air diffuser—has been unobtrusively integrated.

The lounge is painted lavender, a restful pastel-type shade, and the rest rooms are finished in blue and rose tile walls and floors.

The theatre itself is said to be completely fireproof.

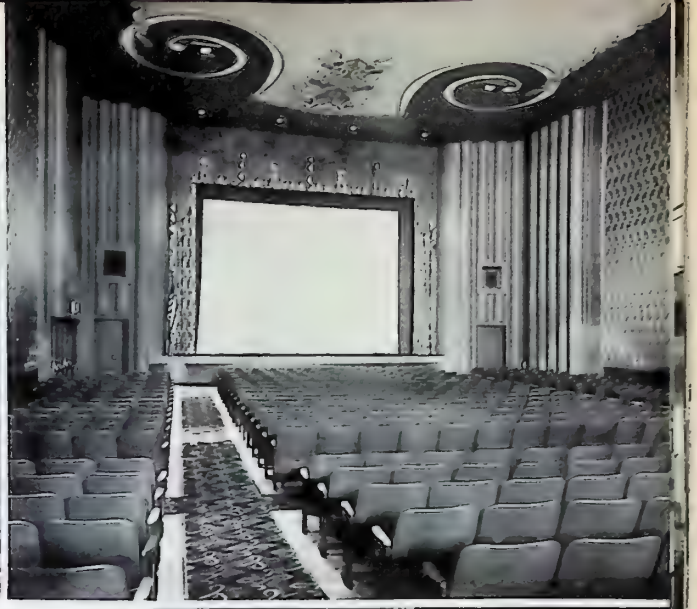
For the predominantly industrial population of some 200,000 Erie citizens, the Strand represents an ideal amusement center.





HERE ARE SEEN one of the recessed traffic-separation stairs, leading to the bleacher deck, a feature on which the architect has a patent pending; and a view of one of the lounges, located in an alcove. The latter not only leads to a rest room, but also to one of the many exits.



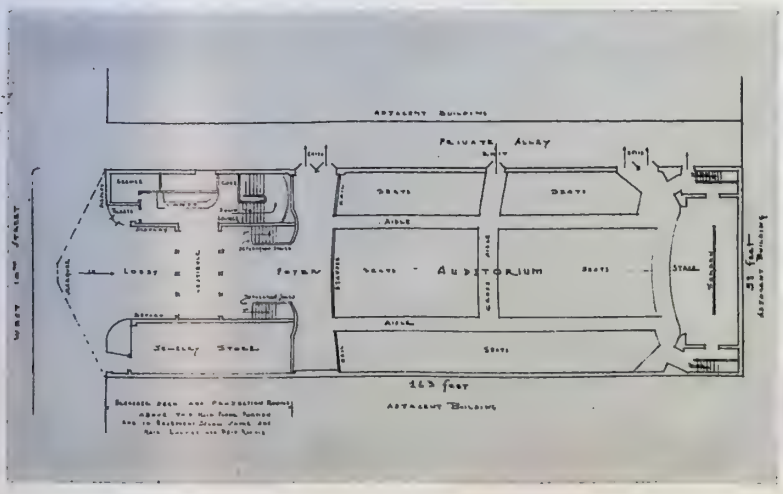


REFERENCE DATA

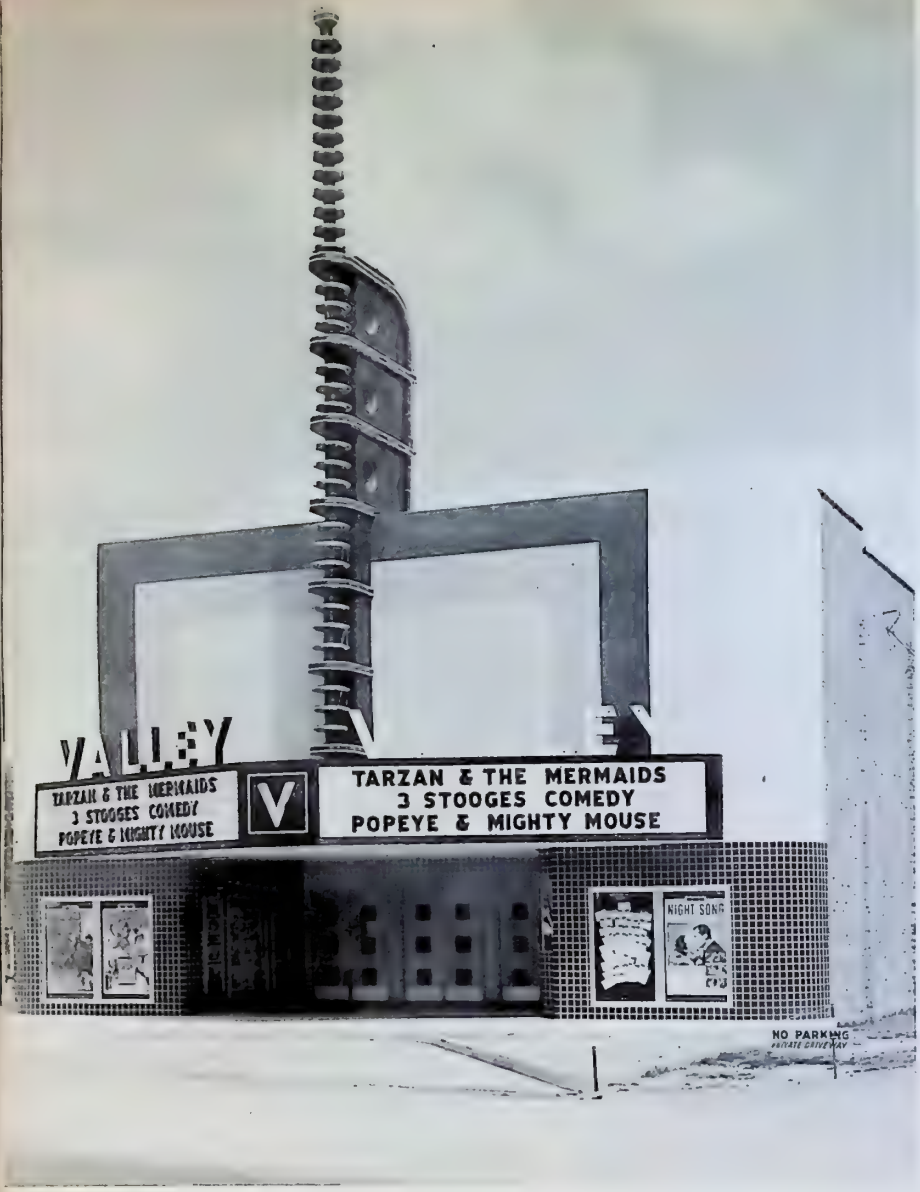
OWNER: Estate of Isaac W. Baldwin.
OPERATOR: Warner Bros.
ARCHITECT: Victor A. Rigaumont.
SEATING CAPACITY: 977.
COST OF BUILDING (including air conditioning): $220,000.
COST OF EQUIPMENT: $60,000.
SIZE OF LOT: 53′ x 163′.
ACOUSTICAL MATERIAL: type MW, by George R. Hall & Sons.
AIR CONDITIONING: 60 tons, by York.
CARPETS: Crestwood, by Alexander Smith & Sons Carpet Co.
CHAIRS: Chief, by Ideal Seating Co.
CHANGEOVERS: Thide, by Dowser.
COINCHANGER: by Brandt Automatic.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: by Rambusch Decorating Co.
DISPLAY FRAMES: by Lobby Display.
DRAPERIES & STAGE CURTAINS: by Charles H. Kenney Studios.
GENERATORS: Robin Imperial, by J. E. Robin, Inc.
LENSES: by Bausch & Lomb Optical Corp.
LIGHTING FIXTURES: by Rambusch Decorating Co.
PROJECTION LAMPS: by C. S. Ashcraft Mfg. Corp.
PROJECTION MACHINES: Super Simplex, by International Projector Corp.
RUBBER MATS: by U. S. Rubber Co.
SCREEN: by Hurley Screen Co.
SIGN & MARQUEE: by Flexlume Sign Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: PG-240, by RCA.
SUPPLY DEALER: Continental Theatre Accessories, Inc.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.
TICKET CHOPPER: by Goldberg Bros.
VENDING MACHINES: by Tri-State Automatic Vending Co.
WALL FABRICS: by Charles H. Kenney Studios.



VIEW OF THE AUDITORIUM (above left) facing the rear, clearly illustrates the bleacher deck arrangement of Architect Rigaumont's design. The interior color scheme is blue and coral with modern painted details and upholstered walls of blue damask. Above right is a view of the auditorium facing the stage. The proscenium is composed of parallel tubing not unlike the pipes of an organ. On the side, right, is a view of one of the lobby stairways leading to the bleacher deck. And below, right, is a view of the theatre front at night with the Strand's unique illumination in evidence.







REFERENCE DATA

OWNER: H. Sorenson & C. C. Dues.
OPERATOR: E. L. Collins.
ARCHITECT: Raymond Smith.
SEATING CAPACITY: 850.
COST OF BUILDING: $102,000.
COST OF EQUIPMENT (including air conditioning): $31,000.
SIZE OF LOT: 195' x 295'.
ACOUSTICAL MATERIAL: Plaster.
AIR CONDITIONING: by U. S. Air Conditioning Corp.
CARPETS: 4 frame Wilton, by Thomas L. Leedom Co.
CHAIRS: by Irwin Seating Co.
CHANGEOVERS: Strong-"Zipper."
CURTAIN CONTROLS & TRACK: by Vallen, Inc.
DECORATOR: J. E. Morgan & Sons.
DISPLAY FRAMES: by Poblocki & Sons.
DRAPERIES & STAGE CURTAINS: by Modern Theatre Equip. Co.
GENERATORS & RECTIFIERS: 75-150 Robin Imperial Generator, by J. E. Robin, Inc.; 2-80 amp. rectifiers, by Strong Electric Corp.
LENSES: Super Snaplite, by Kollmorgen Optical Corp.
PROJECTION LAMPS: Strong Mogul, by Strong Electric Corp.
PROJECTION MACHINES: Motiograph AA, by Motiograph, Inc.
REWINDERS: by Goldberg Bros.
RUBBER MATS: by American Mat Corp.
SCREEN: by Da-Lite Screen Co., Inc.
SIGN & MARQUEE: by Baumaln Electric.
SIGN LETTERS: Plastic, by Adler Silhouette Letter Co.
SOUND: Mirrophonic, by Motiograph.
SUPPLY DEALER: Modern Theatre Equipment Co.
TICKET ISSUING MACHINE: 4 unit, by General Register Corp.
TICKET CHOPPER: Stub control, by General Register Corp.

The Valley

El Paso, Texas

Drawing from a 10,000 populationed suburban area as well as the 100,000 population of metropolitan El Paso, this theatre opened on Labor Day, 1948.

This new house, in a predominantly American-Mexican section of the United States, operates under the policy of three feature changes weekly with an admission scale ranging from 44 cents to 9 cents.

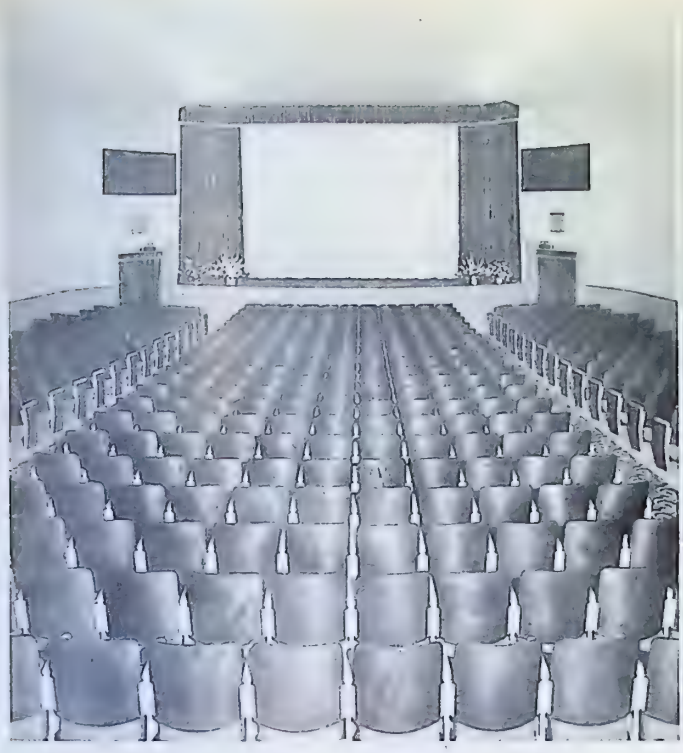
Presenting a strikingly modernistic front elevation of porcelain enamel in light, medium, and dark blue tones, with maroon tile under the marquee, The Valley has a theatrical flair that seems keyed to its patronage. A towering, delicate pylon structure, extending many feet above the roof, closely resembles a layman's impression of an atom-smashing cyclotron.

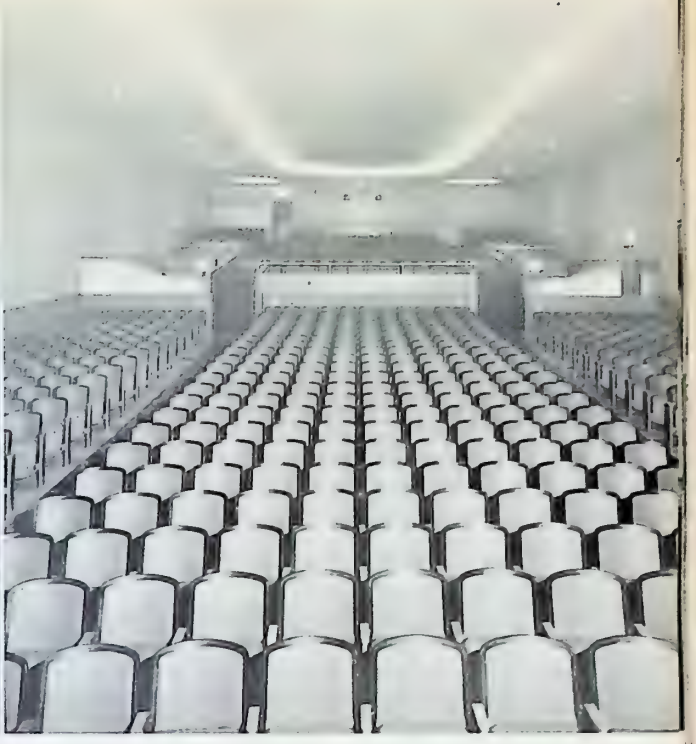
An unusual feature of this house is a semi—regular polygon driveway from the main highway to the theatre entrance which permits patrons to pull out of the regular traffic lanes and disembark safely. In this manner highway traffic is not affected. A small semicircular island at the center of the private drive has been adorned with flowers as have been the sides of the driveway.

To further eliminate any highway congestion, a 400-car parking lot is provided for theatre patrons.

Once through the lobby doors, and past the side boxoffice, the patron discovers an attractive lobby with a ceiling in two tones of blue and maroon side walls, complimenting the exterior decorative scheme.

In the auditorium, this color combination is again encountered. The auditorium, of stadium type, uses the seat staggering system of only four rows of the center elevated section at the rear of the house. On the main floor, the center section of seats is laid out in straight formation. The two side sections are angled slightly toward the screen to afford the best possible viewing angles. On one side of the rear of the auditorium, a cry room for children is provided.

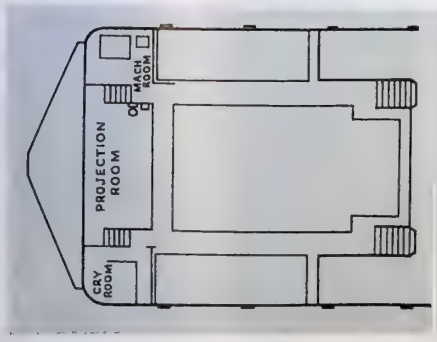


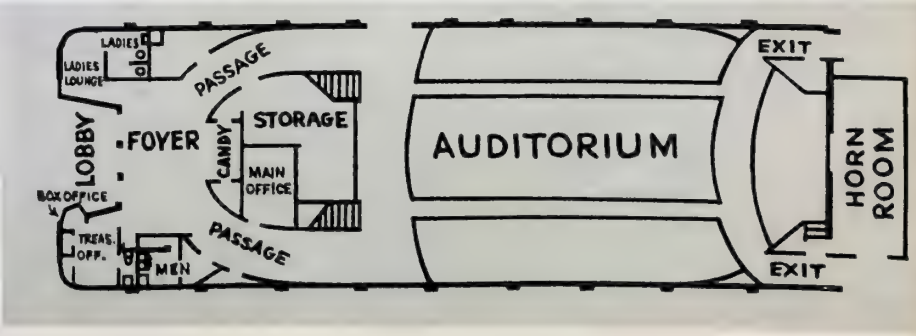


PROSCENIUM DRAPERIES in the auditorium of The Valley give accent to the simplicity and lack of ornamentation of the side walls. Air conditioning outlets, on either side of the stage provide ample ventilation. Note the simplicity of design throughout. A view of the auditorium from the stage clearly shows the elevated stadium section of the theatre. Parallel dropped ceiling panels provide indirect lighting amplified by down-lites. The window of the cry room can be seen at the rear. Decorative aspects of the concession area are manifold. A large glass case for housing confections is attractively surrounded by wood paneling. Large sections of wall mirrors plus indirect and down lighting draw the area to the attention of patrons. Note the inviting leather-covered lounge chairs. Large figured wall-to-wall carpeting ties together the several elements of the foyer and lead down the aisles. Floor plans of the theatre arrangement show the layout of the many features of this house.











The Rita

Vallejo, California

Shave and a haircut before the show; cocktails and hamburgers after an Academy Award picture—the Rita provides all of this stuff and Hollywood art, too. Probably Mr. Ray Syufy of Syufy Enterprises considered the inclusion of barbershop, cocktail lounge, soda fountain and store in his theatre building primarily from the standpoint of a lucrative investment but the fact remains that Rita patrons find the proximity of such popular emporiums a decided convenience.

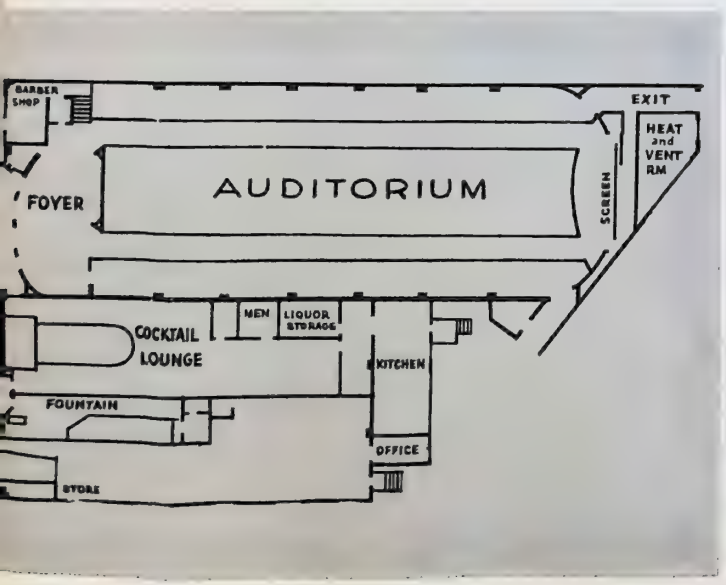
Built in a working class district, with 15,000 cash customers to attract, the Rita can accommodate almost one thousand spectators at each show.

A slender obelisk-like pylon dominates the front both by day and by night. The name of the theatre appears prominently in two places—vertically on the pylon on two-angled cylindrical discs, and horizontally on the main attraction board. Grouped attendant-like around the central pylon are six two-dimensional panels which flow into a solid vertical decoration over the marquee.

At night a bright star without apparent connection with the rest of the theatre floats over the theatre front. And brilliant neon lighting accentuates the starkly modern lines of this unusual facade. The neon-lit soffit bathes the entrance sidewalk in an inviting swath of light.

Formica doors with oversize porthole openings lead the patron to the lobby. After he buys his ticket at the sidewalk boxoffice he glances at the sub-marquee sign board and in a second or less learns the name of the coming feature picture.

Inside, the leatherette padded lobby in a tasteful combination of green and chartreuse tends to create a quiet and relaxed mood, well adapted to ultimate show enjoyment. In the auditorium greens and reds are harmoniously arranged in festive luxuriance. The decorative treatment of the auditorium has been kept within very definite bounds with no loss in aesthetic values. Full attention has been paid to acoustical problems.





REFERENCE DATA

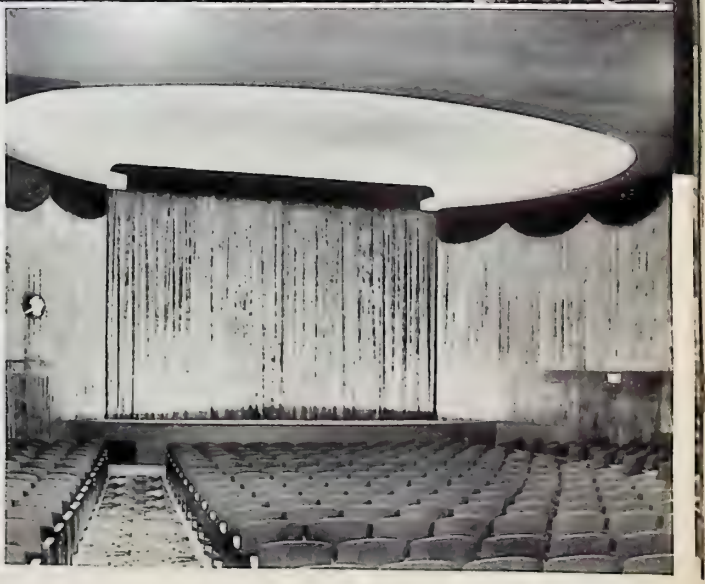
OWNER & OPERATOR: Ray Syufy.
ARCHITECT: Vincent G. Raney.
SEATING CAPACITY: 912.
COST OF BUILDING: $150,000.
COST OF EQUIPMENT: $25,000.
SIZE OF LOT: 100′ x 100′.
CARPETS: by A. & M. Karagheusian, Inc.
CHAIRS: by Heywood-Wakefield Co.
CHANGEOVERS: by Weaver Mfg. Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DRAPERIES & STAGE CURTAINS: by B. F. Shearer Co.
GENERATORS: Robin-Imperial, by J. E. Robin, Inc.
LENSES: Superlite coated, by Projection Optics Co., Inc.
PROJECTION LAMPS: by C. S. Ashcraft Mfg. Co.
PROJECTION MACHINES: by Motiograph, Inc.
REWINDERS: by GoldE Mfg. Co.
SCREEN: Daytone, by Da-Lite Screen Co., Inc.
SIGN & MARQUEE: Kehm Neon Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: by Motiograph, Inc.
SUPPLY DEALER: B. F. Shearer Co.
TICKET ISSUING MACHINE: Automaticket, by General Register Corp.
VENDING MACHINES: Popcorn, by C. Cretors & Co.

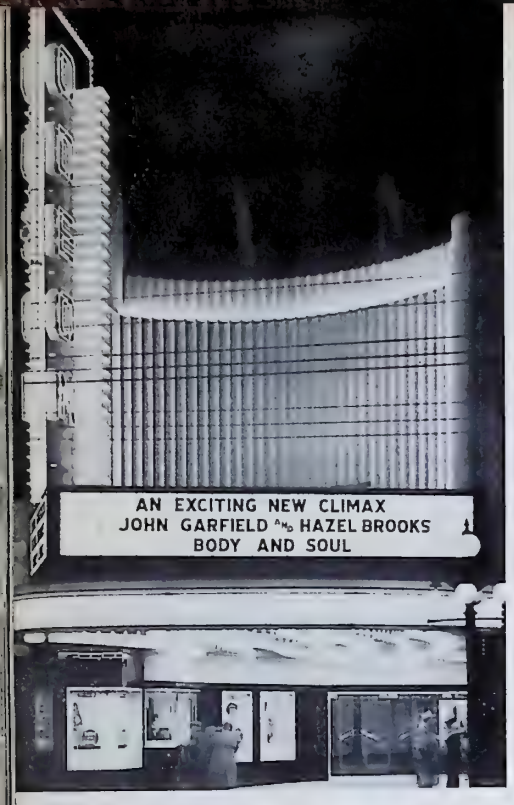




IN THE AUDITORIUM of the Rita, the view from even the last rows is clear and unimpeded. Square panel inserts on the sidewalls add a decorative effect and softly diffuse the light through the room. At the stage end of the auditorium a large light cove and drape-like proscenium provide an effective contrast to the prevailing theme of simplicity. Tufted leatherette walls and bright carpet make the lobby a pleasant transition room. The refreshment counter on the left is exceptionally well placed between the entrance passages to produce maximum sales. The mirror aids fastidious patrons and brightens the lobby; while the built-in divan provides an appreciated touch of comfort.







MATERIALS used in the front have high reflective qualities. Glass is extensively used, with black Vitrolite tile and armor-plate glass door panels. Display frames are of anodized aluminum and the lobby floor is polished terrazzo.

The Odeon

Victoria, British Columbia, Canada

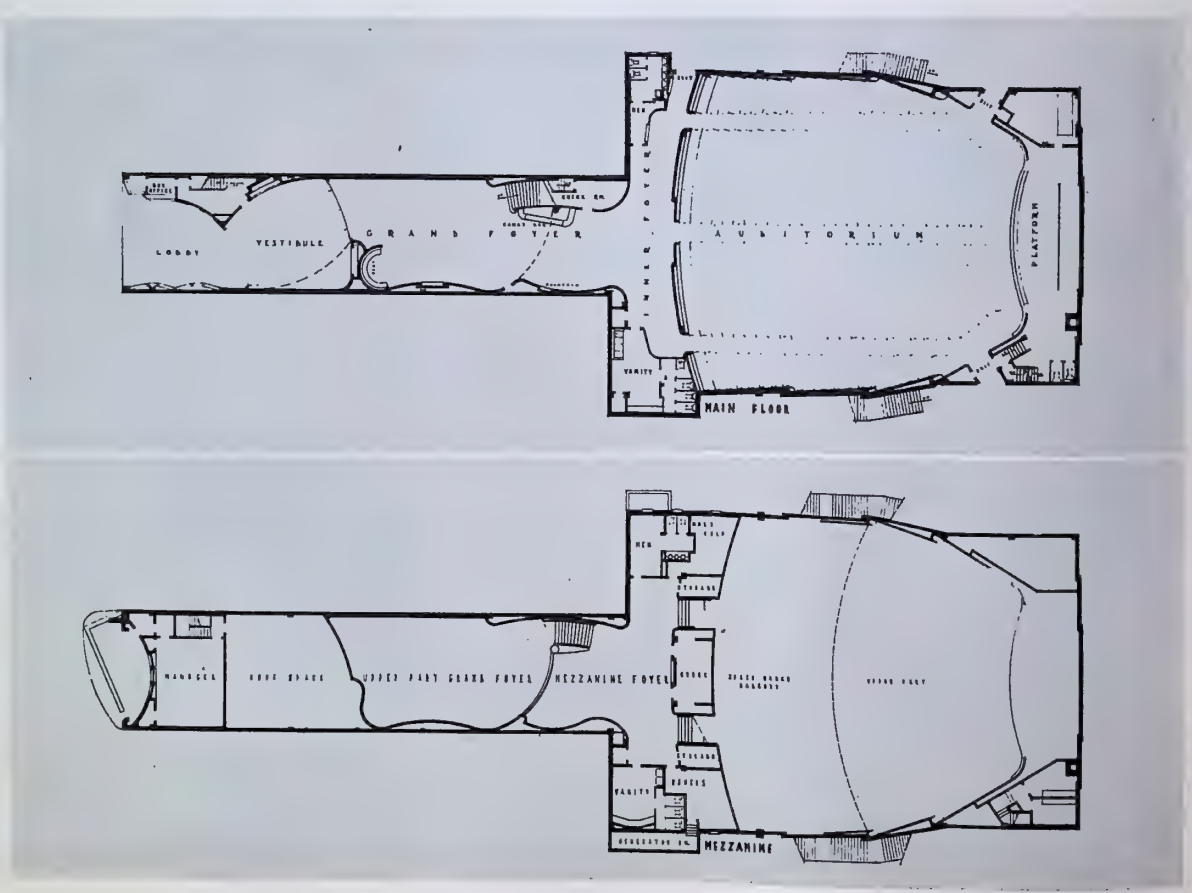
Victoria, capital of the Province and an important Pacific coast port, is located on Vancouver Island and has a drawing population of 75,000. From a theatre standpoint, it must cater to one of Canada's most unusual publics. An important section of the population is English, living in retirement. But in recent years it has become a winter and summer resort district drawing most of its visitors from the United States. In addition to its position as a government seat and naval base, it is the center of an area which is becoming increasingly industrialized with further population shifts in prospect. As a result of all this, there has developed two important theatre-going groups with diametrically opposite tastes in film-fare; but all agreeing on the need for modern patron comforts.

In the design of this new Odeon, an important consideration was the use of lighting for display and advertising purposes.

Located in the central business district, due to the circumstances of the site, its main street frontage was restricted to 30 feet, from which an exceptionally long lobby and foyer leads to the 80 feet wide by 115 feet deep auditorium. To give the front an effect of greater width, a concave facade, fluted and specially designed for floodlighting, was used. Great under-marquee and outer lobby brilliance, starts the first of a series of gracefully curved entrance rooms which smartly cut down the effect of great length. At the auditorium end a high ceiling dome and grand staircase also tend to dwarf by contrast the entrance walk.

The auditorium is richly comfortable, depending on architectural planes and cove lighting for its decorative treatment. Aisles are thickly carpeted, extra leg room exists between the over-upholstered seats, acoustics are good, and year-round air conditioning is automatically controlled.

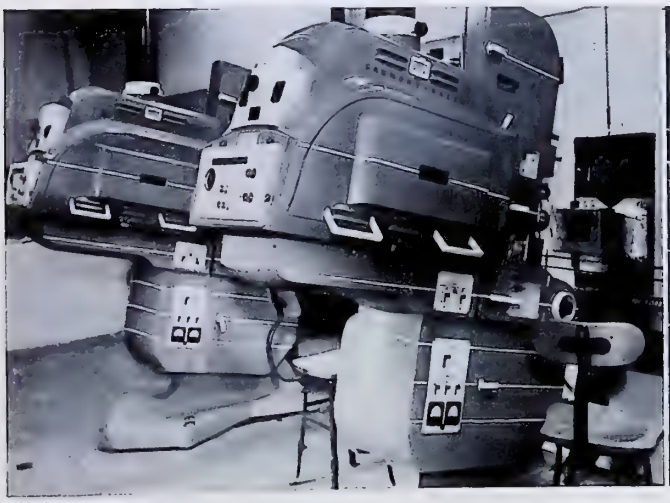
Construction standards were high, and most equipment, is of British manufacture.







THE STAGE END of the auditorium is heavily draped to compensate for lack of the conventional proscenium arch. The cove lighted wall sections follow the outlines of the series of ceiling steps. Architectural features of the carpeted grand foyer are the curving walls and ceiling dome which culminate in the dignified staircase. The candy bar is not overlooked and makes up in location and dignity what it might lose from lack of exploitation. It is regretable that the public doesn't view the booth, for the huge Rolls-Royce nature of the Gaumont-Kalee "21" projector ensemble seems wasted on a few projectionists. Even the balcony has leg-room to spare, and wide, deep chairs invite patronage.





REFERENCE DATA

OWNER & OPERATOR: Odeon Theatres (Canada) Ltd.

ARCHITECT: H. H. Simmonds.

SEATING CAPACITY: 1,472.

ACOUSTICAL MATERIAL: Fiberglas.

AIR CONDITIONING: by General Electric Co.

CARPETS: by Toronto Carpet Co.

CHAIRS: by Interior Hardware Co.

COINCHANGER: Johnson Lightning Cashier, by Johnson Fare Box Co.

DECORATOR: Mullins Painting & Decorating Co.

DISPLAY FRAMES: Aluminum, by Ornamental Bronze Co.

FILM CABINETS: by Neumade Products Corp.

GENERATORS: Stabilarc, by Automatic Devices Co.

LENSES: by Gaumont-Kalee, Ltd.

PROJECTION LAMPS: by Gaumont-Kalee, Ltd.

PROJECTION MACHINES: Gaumont-Kalee "21".

REWINDERS: Automatic, by GoldE Mfg. Co.; Hand, by Wenzel Projector Co.

SCREEN: by Gaumont-Kalee, Ltd.

SIGN & MARQUEE: by Neon Products of Western Canada, Ltd.

SOUND: by Gaumont-Kalee, Ltd.

SUPPLY DEALER: Gaumont-Kalee, Ltd.

TICKET ISSUING MACHINE: Automaticket, by General Register Corp.



The Old Trail

Columbus, Ohio

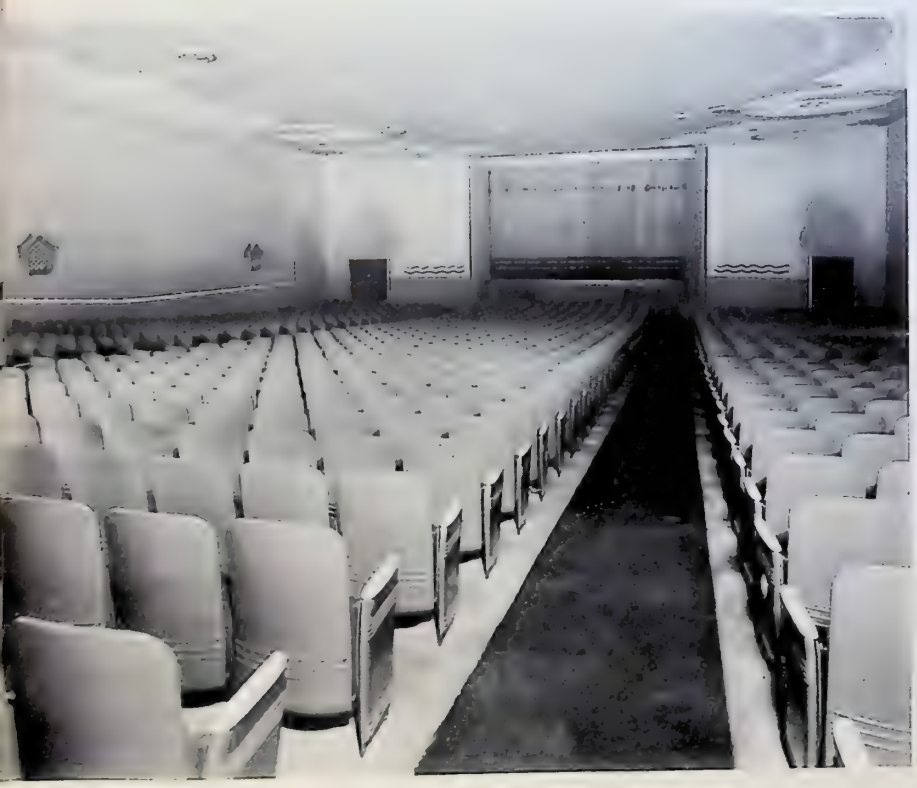
The exterior of this 1300-seat suburban house is of white painted brick with interest spots of stylized Chinese design motifs. The facade is characterized principally by a huge pylon and the mass of unbroken area of the front. Accentuating the weight of this mass is a four-by-four foot idol niche, backed in handsome Wang Pu red structural glass, highlighted by white oriental grill work. On the ceiling of the marquee, 317 incandescent lights carry out a Chinese design, connected by red and gold painted lines and neon.

The marquee abutts the pylon on one end; and is supported by the boxoffice on the other. Eight birch slab doors, centered with three equal square cut-outs of glass, distinguish the entrance into the lobby. Recessing of these doors beyond the line of the front of the building achieves an inviting appearance and provides for a spacious ingress area.

The sidewalls and ceiling of the entrance lobby are of sand color, offset by a painted circular oriental design, emphasized by neon, on the ceiling. The flagstone floor of the lobby, of Vermont slate, gives a warm and distinctive overall effect, suggestive of a temple garden walk.

In the standee space and the main auditorium, the attention of the theatre patron is drawn to the strong Chinese colors so artfully blended in the design motif. The ceiling has a Chinese red field extending from the proscenium to the standee space. This center field is further complemented by a surrounding ten-inch wide gold stripe, a wide band of sprout green, and a surrounding field of clear jade green which extends down the sidewalls on either side of the proscenium. The ceiling area near the proscenium is featured by huge cloud-like designs of sand color. The vivid coloring on the rough acoustical plaster ceiling finish gives the effect of a giant Oriental rug.

The Old Trail Theatre is unique in its air conditioning system. It was the first theatre in the Middle West to be equipped with a Glycol Vaporizer which is fully described in this edition of THEATRE CATALOG.



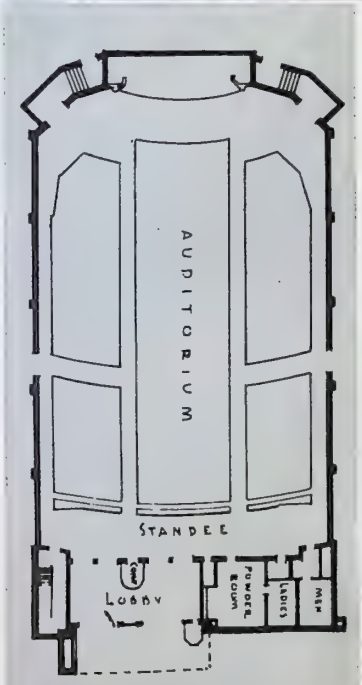
THE LOBBY (top) is highlighted by gilded wooden Chinese grill work superimposed on a carmen red leatherette background. Chinese motif is subtly carried into the auditorium. Jade green spun glass fabric covers the sidewalls. The proscenium is in Chinese red with a base of rich Ming purple. The curtain is brilliant gold.



REFERENCE DATA

OPERATOR: Academy Operating Co.
ARCHITECT: F. & Y. Building Service.
SEATING CAPACITY: 1,300.
SIZE OF LOT: 190' x 400'.
ACOUSTICAL MATERIAL: Limpat, by Keasebey & Mattison Co.
AIR CONDITIONING: Well water & deep pump, by Fairbanks, Morse & Co.
CARPETS: Pixtred, by Albert Pick.
CHAIRS: by Ideal Seating Co.
CHANGEOVERS: Strong "Zipper", by Essannay Electric Mfg. Co.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DECORATOR: F. & Y. Building Service.
DISPLAY FRAMES: by Wagner Sign Service, Inc.
DRAPERIES & STAGE CURTAINS: by Business Boosters Equipment Co.
LENSES: by Kollmorgen Optical Corp.
LIGHTING FIXTURES: by Westinghouse Electric Corp.
PROJECTION LAMPS: Strong Mogul, by Strong Electric Corp.
PROJECTION MACHINES: by Ballantyne Co.
RECTIFIERS: by Strong Electric Corp.
REWINDERS: by Wenzel Projector Co.
RUBBER MATS: by Perfo Mat & Rubber Co.
SCREEN: by Raytone Screen Co.
SIGN & MARQUEE: by Hanover Electric Co.
SIGN LETTERS: by Wagner Sign Service, Inc.
SOUND: Soundmaster, by Ballantyne Co.
SUPPLY DEALER: American Theatre Equip. Co.
TICKET ISSUING MACHINE: by General Register Corp.
TICKET CHOPPER: by GoldE Mfg. Co.
VENDING MACHINES: Everfrost, by Anderson & Wagner.
WALL FABRICS: by Business Boosters Equipment Co.







THE AUDITORIUM presents restful oriental atmosphere. The rear portion of the ceiling is dominated by a huge Yang Yin, the chinese symbol of life. The handsome standee railing is covered with pearl grey leatherette tastefully trimmed with oyster white molding. Two views of the powder room illustrate striking effectiveness.







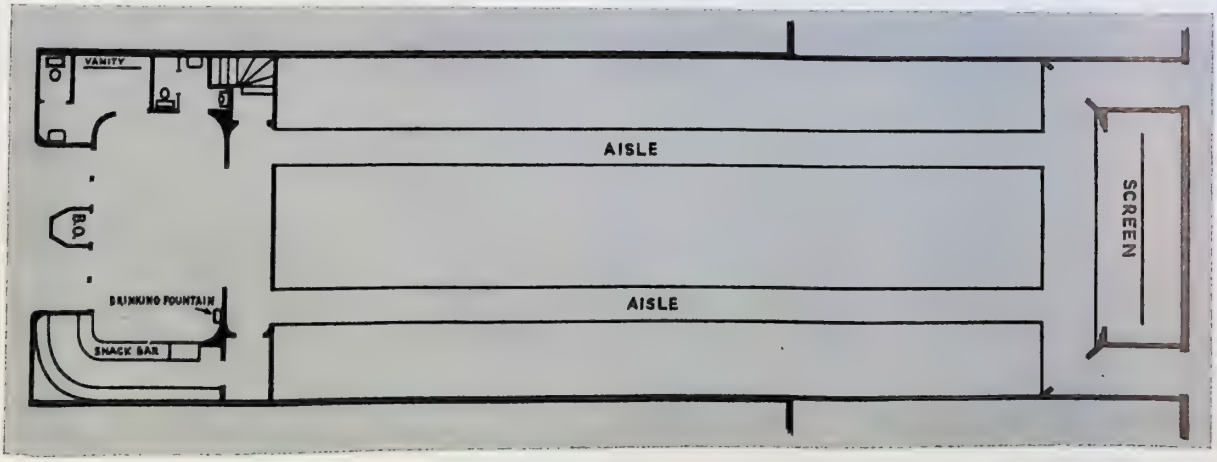
The Dome

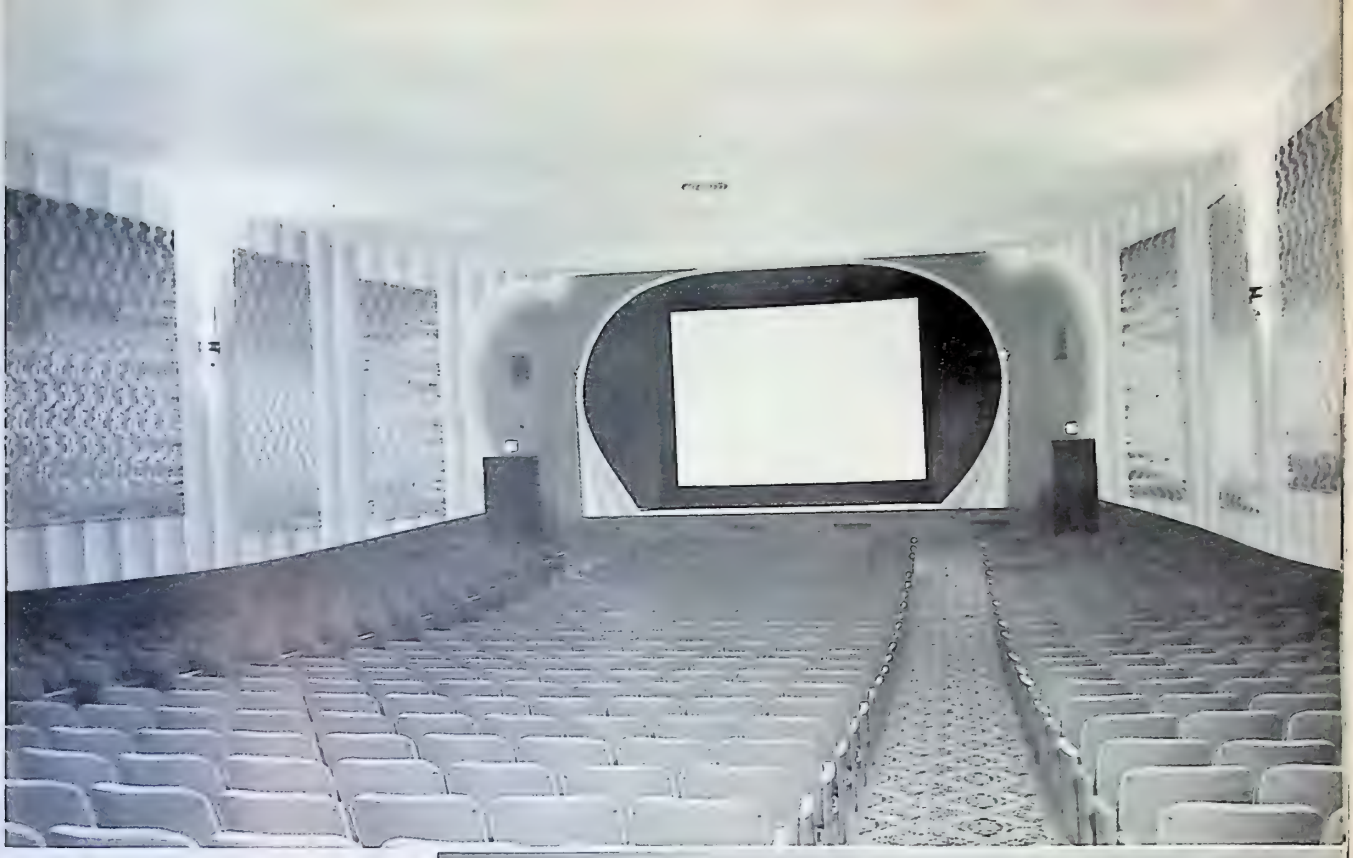
Libby, Montana

After 39 years of service as the Opera House and later the Kootenai Theatre, fire leveled the original structure on January 20, 1948. From the ashes rose the new Dome named for one of Montana's most artistically beautiful mountains. Despite bad weather, a late spring, and recurrent floods, the grand opening took place just five months after ground was broken.

Constructed of reinforced concrete block with a poured cement front, the building is completely air conditioned, and enjoys a forced-air oil fired furnace for the necessary winter heating. The relatively simple plan located the auditorium, large foyer, confection area and ladies' and men's lounge and toilet rooms on the first level, and located a cry room and offices on the upper, projection room, level. The auditorium is distinguished by a new bowl-shaped concrete floor slope that is claimed to provide exceptionally good vision, and an oval proscenium opening. There is also a dumbwaiter for taking the film cans to and from the projection rooms.

The resultant 594 seat theatre is a complete transition from the old theatre in both design and patron facilities.





THE AUDITORIUM has been acoustically treated with an acoustic tile ceiling and fabric wall panels. Exposed lighting fixtures and the highlighted proscenium section provide a minimum of decoration. The foyer is slightly more ornamental. A Voigt drinking fountain, sunburst ceiling fixture, and large mirrored wall, balance the flex-glass front of the confection bar.





REFERENCE DATA

OWNER & OPERATOR: Mrs. Arthur Neils & Mrs. A. J. Agather.

ARCHITECTS: Lathrop & Gillam.

SEATING CAPACITY: 594.

CARPETS: by Alexander Smith & Sons Carpet Co.

CHAIRS: by Ideal Seating Co.

CURTAIN CONTROLS & TRACK: by Vallen, Inc.

DECORATOR: Wake & Son.

DISPLAY FRAMES: by Poblocki & Sons.

LENSES: Super Snaplite, by Kollmorgen Optical Corp.

MARQUEE: by Poblocki & Sons.

PROJECTION LAMPS: by Strong Electric Corp.

PROJECTION MACHINES: Century "CC", by Century Projector Corp.

RECTIFIERS: by Strong Electric Corp.

REWINDERS: Automatic, by GoldE Mfg. Co.

SCREEN: Snowhite, by RCA.

SOUND: by Century Projector Corp.

SUPPLY DEALER: Western Theatre Equip. Co.

TICKET ISSUING MACHINE: Automaticket, by General Register Corp.



The Odeon-Champlain

Montreal, Canada

In a city where more than 75 per cent of the population speak French, the construction of a theatre specifically for first-run French-language pictures becomes a major event. This new house opened its doors in the main French business section of Montreal on the evening of March 27th, 1948 and gave French-Canadian cinema fans a vivid new center. House policy is to present Paris originals, Hollywood dubs, and French versions of J. Arthur Rank's English productions.

Of course, the 1409-seat Champlain does not rest merely on the laurels of its linguistic abilities. Architecturally the building presents many interesting features. The facade is of glazed Hanley Norman brick. A curved attraction board marquee is surmounted by a turret of glass and aluminum and the name of the theatre stands out prominently on a vertical fin attached to the front of the turret.

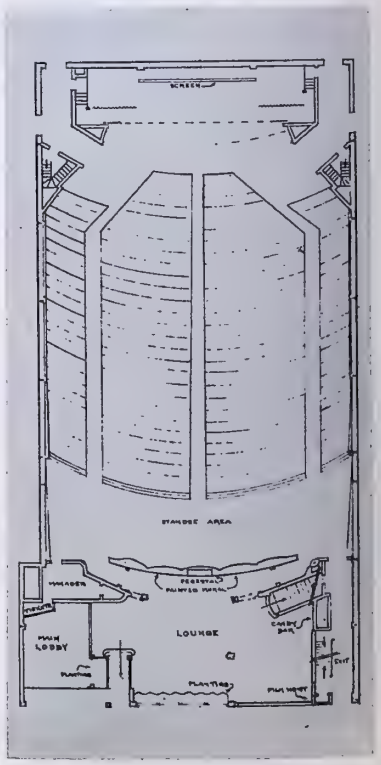
Entrance doors are all glass, framed in buff and pinkish Montebello stone which is carried into the ticket lobby and the lounge with good effect. The lounge has a large picture window which permits a direct street view of the foyer. There are extensive lounge areas on both the main and the mezzanine floors.

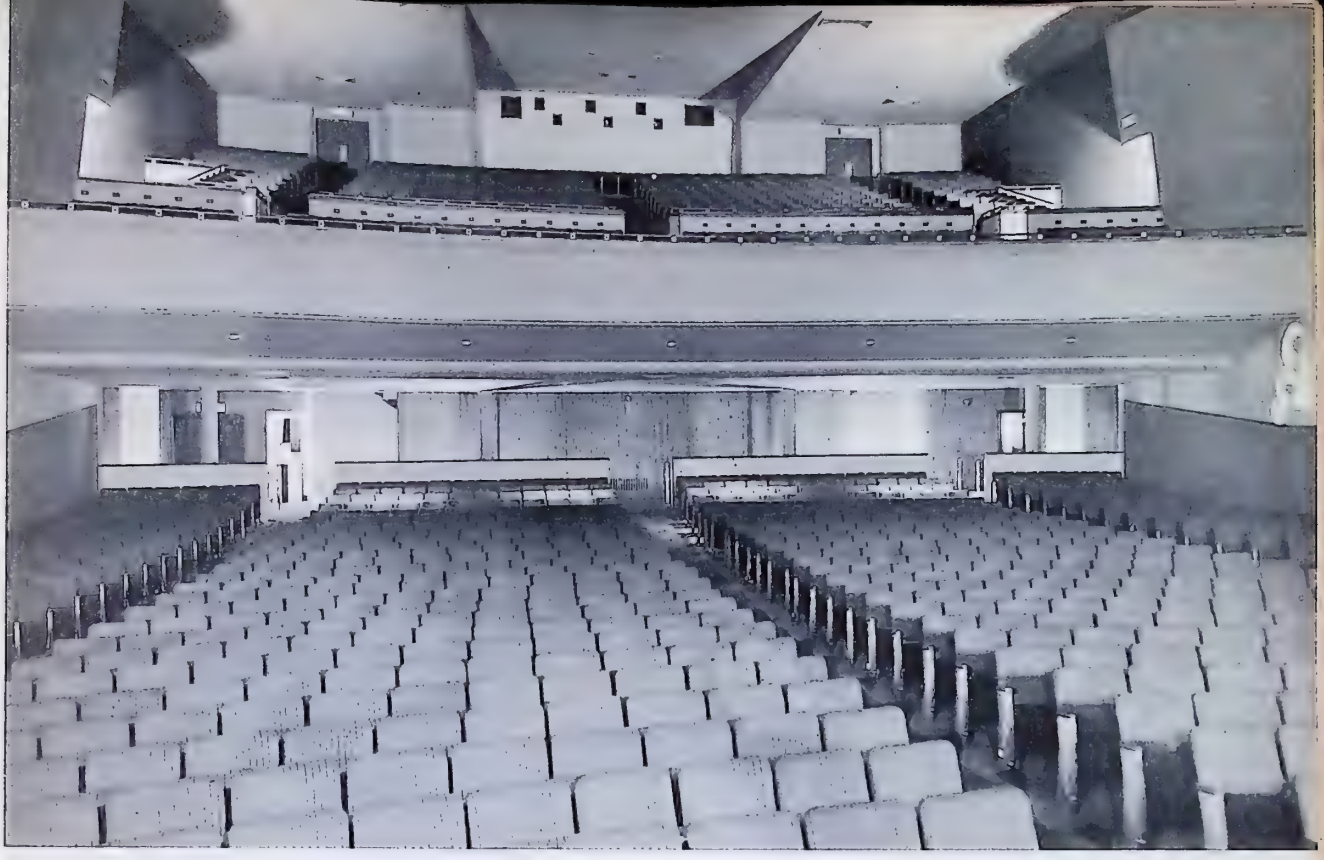
In the decorative scheme, great use has been made of Canadian woods including novel scored paneling of birch finished in pastel and mahogany shades. Acoustical qualities of the auditorium are built-in by the use of curves and planes in the walls and ceiling. For example, each side wall in the auditorium has four large splayed panels to avoid parallelism in sound. Painted leaf green and decorated with plaster rococo moldings in bone white, these panels add a dramatic feeling to the interior decoration.

Colors were used in the Champlain without inhibition. Greens ranging from chartreuse to deep leaf, reds from light crimson to plum, and turquoise, gray, white and gold provide a rich visual treat. Many unorthodox touches are apparent too—the application of such colors as plum to maple and birch. However, the end result is pleasing to the eye which, after all, is the final judge of decor.

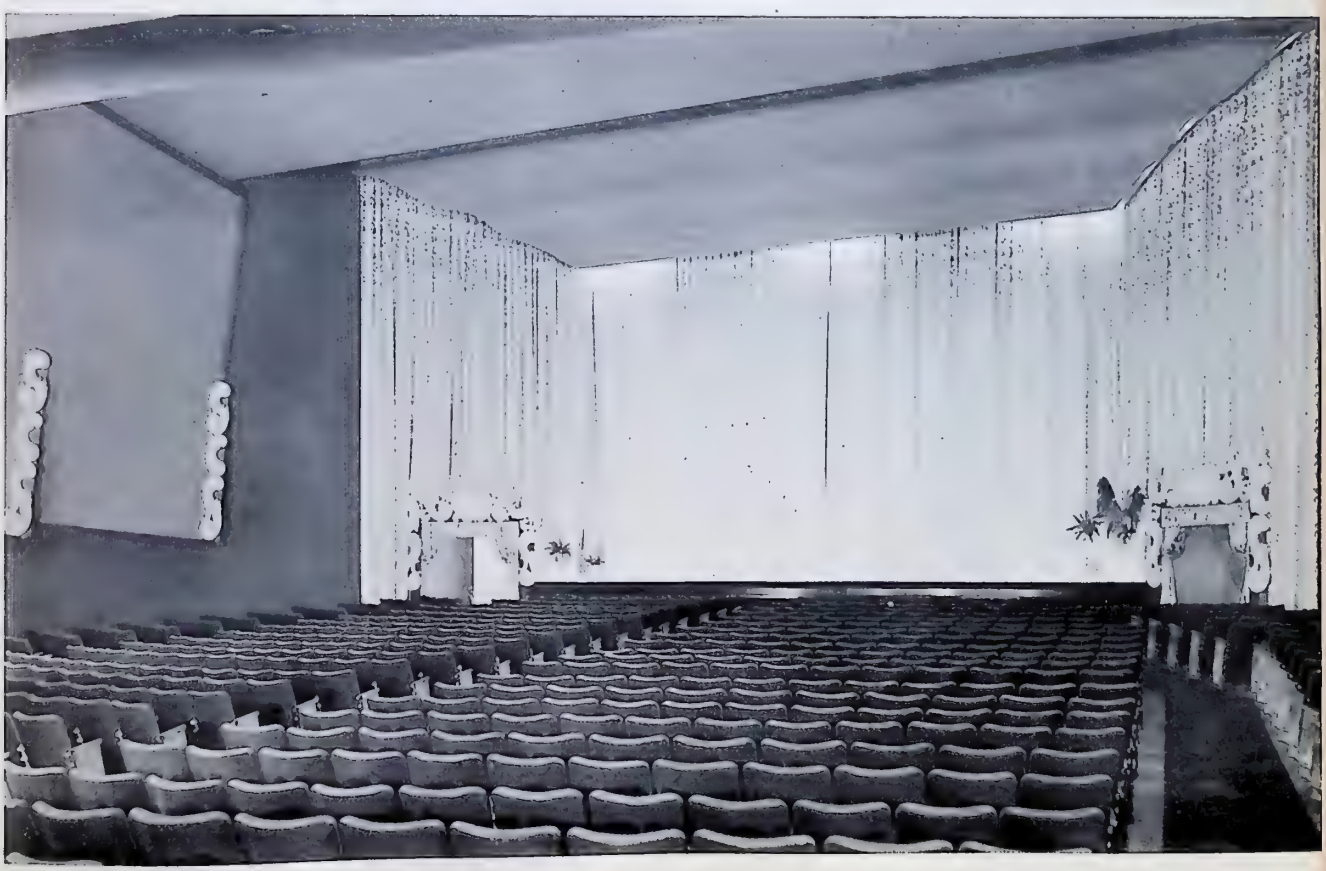
REFERENCE DATA

OWNER: General Theatres (Quebec) Ltd.
OPERATOR: Odeon Theatres (Canada).
ARCHITECT: H. E. Greenspoon.
SEATING CAPACITY: 1,409.
SIZE OF LOT: 100′ x 225′.
ACOUSTICAL MATERIAL: Fibreglas bats & fabric.
CHAIRS: by Interior Hardwood.
CURTAIN CONTROLS & TRACK: by Automatic Devices Co.
DRAPERIES & STAGE CURTAINS: by O. H. Evans.
GENERATORS: Stabilarc, by Automatic Devices Co.
PROJECTION LAMPS: Gaumont-Kalee.
PROJECTION MACHINES: Gaumont-Kalee "21".
REWINDERS: by Wenzel Mfg. Co.
SCREEN: Kalux.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: by Gaumont-Kalee, Ltd.
SUPPLY DEALER: Gaumont-Kalee, Ltd.
TICKET ISSUING MACHINE: by General Register Corp.





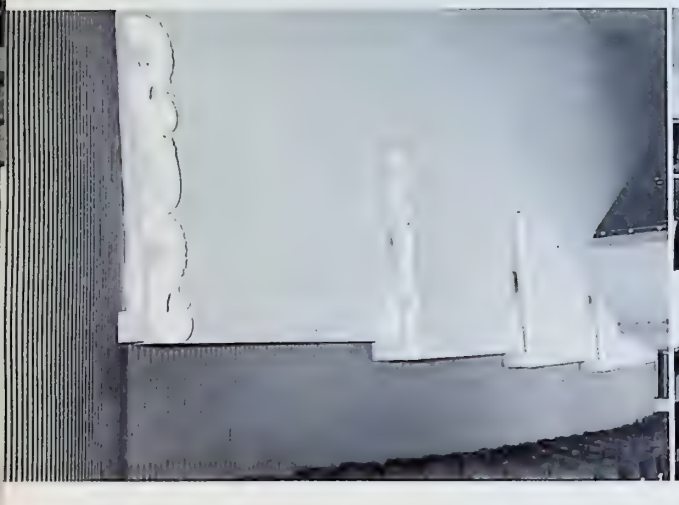
THE THREE-AISLE SEATING ARRANGEMENT on two levels with seats placed 34 inches back to back contributes greatly to patron comfort. In the balcony, several seats are equipped with hearing aids for deaf patrons. In the lower view, side curtains extending into the auditorium proper replace the proscenium arch and create the desired illusion that the seated audience and the screen action are an organic unity.







ABOVE. Left: A facing of cream-colored leatherette with brass studs creates a rich effect at the candy bar. Woodwork on the bar is mahogany, and the top is covered with stainproof Formica in a cream colored linen weave pattern. Paneling at right is striated birch blending into fluted birch in diagonal designs beside the staircase. Right: Painted dark green, the lounge ceiling has twelve square light coves containing gold fluorescent tubes. The coves are painted chartreuse to counteract the red of the lights, producing a brilliant effect against the ceiling.





ABOVE. Left: Upper walls and ceiling are in dusty pink plaster and a specially created harmonizing tone of red. Baroque decorations are bone-white plaster. Balance of the wall treatment is plumb colored corrugated asbestos. Right: A mirror runs around the powder room at eye level. The larger mirror at the dressing table has a false frame finished in colorful crossbands of mauve, green and blue shades. Below, left: Circular tower stairway to the balcony is particularly impressive and the cast aluminum windows create a dramatic interruption in the evenly flowing rhythm of the walls. Right: Detail of the exits at either side of the stage and screen. Outlined in a sculptured bone-white plaster baroque frame against wall curtains, the door drapes around the exit itself are normally drawn. The effect is extremely rich and modern.





REFERENCE DATA

OWNER: Petersburg Pike Drive-In Corp.
OPERATOR: Fabian Theatres.
ARCHITECT: Michael J. De Angelis.
CAR CAPACITY: 1,020.
COST OF THEATRE: approx. $200,000.
COST OF EQUIPMENT: approx. $45,000.
SIZE OF LOT: 23 acres.
IN-CAR SPEAKERS: by RCA.
LENSES: Snaplite, by Kollmorgen Optical Corp.
PROJECTION LAMPS: Brenkert.
PROJECTION MACHINES: Brenkert.
SIGN & MARQUEE: by White Way Neon Service, Inc.
SOUND: by RCA.
SUPPLY DEALER: Capitol Motion Picture Supply Co., & Elmer H. Brient & Sons, Inc.
TICKET ISSUING MACHINE: by General Register Corp.



The Bellwood Drive-In

Richmond, Virginia

Adjacent to U. S. Route No. 1, and only four miles from the city-limits of Richmond, this 1015-car drive-in is laid out on a gentle slope that facilitates the task of grading and drainage.

The method of segregating audiences, that is accepted in this area, can be noted at the upper right corner; and requires dual facilities of boxoffice, confectionery stand and toilets.

The screen tower backs the road and thereby provides excellent areas for night and name lighting with neon and floods.

A manager's office in the screen tower is in close proximity to the two boxoffice islands which serve the four lanes necessary to such a large car capacity.









The Niles Outdoor

Niles, Michigan

Exhaustive research and study as well as accepted features developed in recent months of successful drive-in operation went into the construction of The Niles Outdoor, Niles, Michigan.

Included in the list of innovations to enhance the pleasure, comfort, and convenience of the patrons, is a completely equipped playground area directly in front of the tower screen. Other installations for patron comfort are a series of light baffles that protect the screen from headlights of departing cars; a macadamized surface of 70,000 square yards; ramp lights for illuminating aisle and space numbers; and a clearly marked pedestrian path leading from the center of the auditorium to the handsome-tiled concession building.

The theatre consists of an administration-screen tower structure; a concession area; two boxoffices with handsome canopy; a sign tower; and utility building. The boxoffice edifice combines both utility and decorative features with a radical departure from the conventional design.

The approach to the ticket office and the drive leading into the auditorium itself provides pre-parking space, eight lanes wide, for 600 cars.

The sign tower features the name NILES in flashing incandescents with a ruby red neon halo border. A flashing entrance arrow and attraction board complete this well designed feature.

The drawing power of the concessions building is further augmented by means of large windows for patrons to watch the movie.

REFERENCE DATA

OWNER: Indiana Illinois Theatres, Inc.

OPERATOR: Manta & Rose.

ARCHITECTS: Rapp & Rapp.

CAR CAPACITY: 1,000.

COINCHANGER: Johnson Lightning Cashier, by Johnson Fare Box Co.

GENERATORS: Motor Generator Corp.

IN-CAR SPEAKERS: by Motiograph.

LENSES: Super Snaplite F 1.9 coated, by Kollmorgen Optical Corp.

PROJECTION LAMPS: Motiograph 75-115 amp. high intensity, by Motiograph.

SOUND. Mirrophonic, by Motiograph.

PROJECTION MACHINES: Motiograph AA, by Motiograph, Inc.

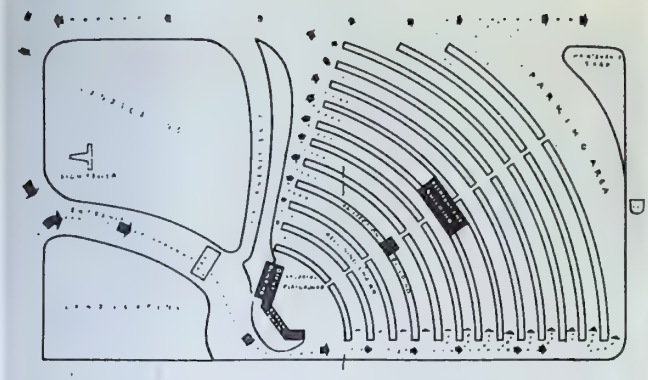
SIGN & MARQUEE: by South Bend Neon Co.

SIGN LETTERS: by Wagner Sign.

SOUND: Mirrophonic, by Motiograph.

SUPPLY DEALERS: Ringold Theatre Equip. Co. & Abbott Theatre Equip. Co.

TICKET ISSUING MACHINE: by National Cash Register Co.





UPPER LEFT: The plot plan of the area shows in full detail the unique design achieved. Upper right is a view of the entrance sign situated near the main highway. The flashing name sign and arrow are eye-catching to passing motorists. The attraction board is a bright spot at nite. The base of the sign is field stone with the name sign against a background of corrugated transite. LOWER photos show the unusual boxoffice at night. Panels of downlights in the slanted roof brilliantly illuminate the space and enhance the functional design. The screen tower administration structure is shown in a day view. Most attractive is the judicious use of field stone to accentuate a particular area.







The Gratiot Drive-In

Gratiot, Michigan

Located in Gratiot, Michigan, a small Detroit suburb, this drive-in was designed essentially as an open air movie house and not a multi-purpose recreation project despite its 21 acres. Everything has been built around the primary purpose of giving car owners and their passengers an opportunity to enjoy an out-door screen performance under the best possible conditions.

To gain this end, two important secondary operations have been incorporated with that view in mind. A small playground is provided for youngsters with full scale recreation equipment. This provides a safe place for youngsters, out of reach of automobiles moving in or out of the theatre, if their parents choose to turn them loose. An efficient matron is on duty at all times to give personal supervision to the children. The youngsters' interest is further assured by provision of free pony rides in the little park beneath the screen.

The second subordinate operation is the concession service, centered in a suitably-sized building located equi-distant between the screen and the projection booth. A fairly complete food service is provided as are the standard outdoor refreshments. Additional service is provided by perambulating vendors who may be summoned by a signal button attached to each in-car speaker.

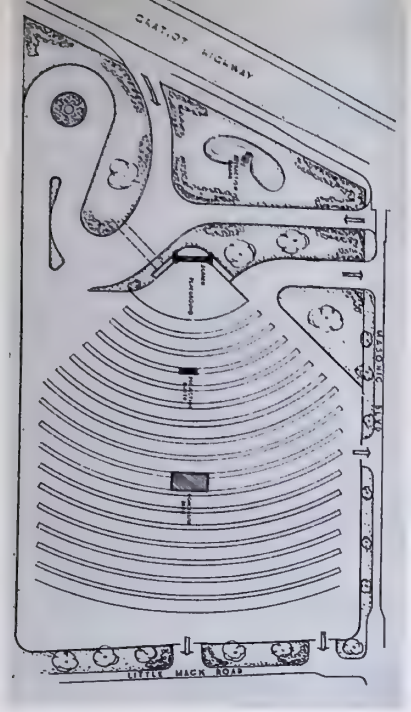
The 115 foot entrance tower, with the screen on the reverse side, is unique in its use of a triple cascade motif over which 1700 gallons of water are pumped each minute. The cascades are lighted from beneath in multi-colored patterns for a very pleasing and decorative effect. The iridescence of the tower has become the trademark of the theatre as it is now being used in the theatre's advertising.

LEFT: A small playground featuring full-scale recreation equipment. An area, directly in front of the screen, has been provided for this feature. Center: For better vision the windshield of each car is cleaned by an attendant. Right: Free pony rides help keep the kiddies happy.











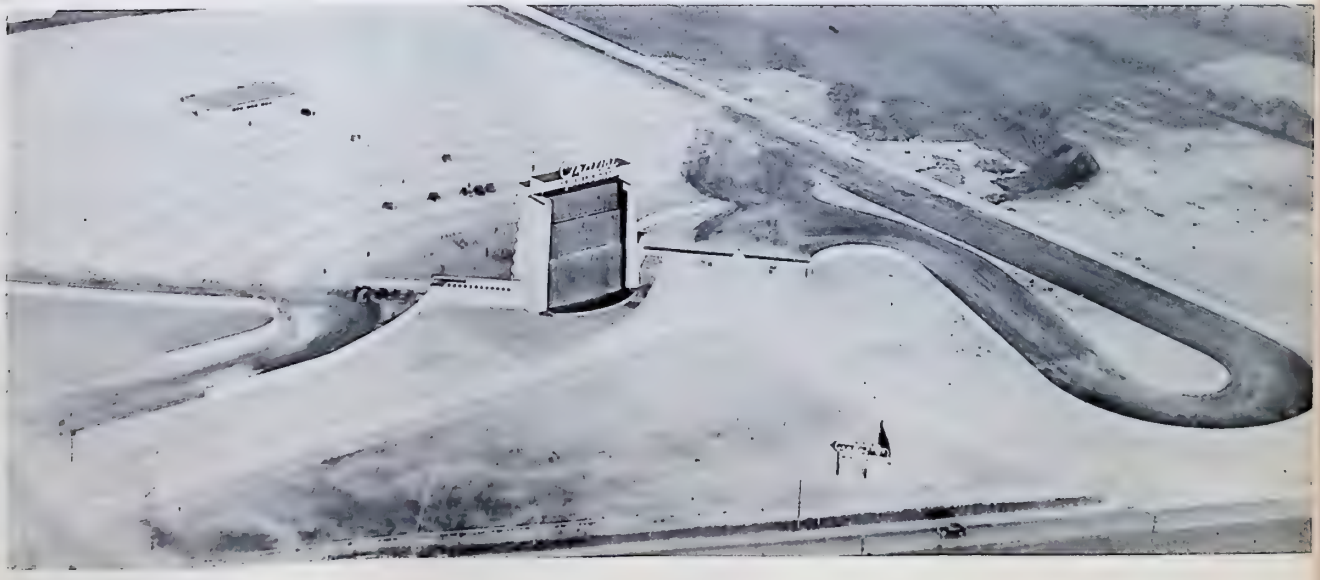
THE SCREEN TOWER seen from the highway shows the name sign and the structural work necessary for the watercascade. To the right are the boxoffices and entrances.

REFERENCE DATA

OPERATOR: Associated Theatres, Inc.
ARCHITECT: Ted Rogvoy.
CAR CAPACITY: 1,000.
COST OF THEATRE: $375,000.
COST OF EQUIPMENT: approximately $50,000.
SIZE OF LOT: 22 acres.
GENERATORS: by Hertner Electric Co.
IN-CAR SPEAKERS: by RCA.
LENSES: by Kollmorgen Optical Corp.
PROJECTION LAMPS: Peerless Hy Candescent, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Simplex, by International Projector Corp.
SIGN: by Long Sign Co.
SIGN LETTERS: by Wagner Sign.
SOUND: by RCA.
SUPPLY DEALER: National Theatre Supply Co.
TICKET ISSUING MACHINE: by National Cash Register Co.



THE RAMP AREA has a 1000-car capacity with seventeen ramps spaced 38 to 40 feet apart. Grading is designed so that each car tilts for better rear seat vision.





The Battle Creek Auto

Battle Creek, Michigan

Primarily a drive-in, the Battle Creek Auto Theatre also has the unusual attraction of a 40 x 60 feet concrete dance floor located outside the concession stand. Here patrons may dance before the start of the evening show and also during the half hour intermissions. Also included for patron service is a supervised playground for children at the base of the screen tower.

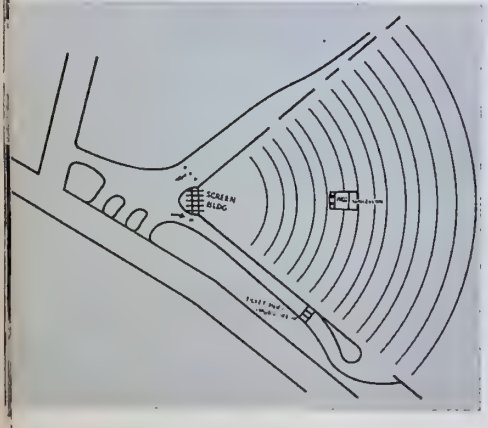
To insure patron safety, two 50 foot poles in the back of the theatre provide moonlight lighting, enabling hungry or thirsty patrons to find their way to the refreshment stand and back to their cars without any difficulty.

Two ticket offices, handling four lanes of traffic, are located half-way back of the theatre thus giving a large waiting room area off of the highway. The manager's office is located on the second floor of the entrance building, enabling him to see the entrance, exit, entire theatre, and highway from his desk.

REFERENCE DATA

OWNER: Midwest Enterprises.
CAR CAPACITY: 880.
COST OF THEATRE: $175,000.
COST OF EQUIPMENT: $25,000.
SIZE OF LOT: 20 acres.
CHANGEOVERS: Strong "Zipper".
IN-CAR SPEAKERS: by Theatre Equipment Co.
LENSES: Kollmorgen Optical Corp.
PROJECTION LAMPS: Strong Mogul.
PROJECTION MACHINES: by Century Projector Corp.
RECTIFIERS: 80 amp., by Strong.
REWINDERS: by Goldberg Bros.
SIGN LETTERS: Plastic, by Wagner.
SOUND: by Century Projector Corp.
SUPPLY DEALER: Theatre Equipment Co.
TICKET ISSUING MACHINES: Automaticket, by General Register Corp.

The plot plan shows the theatre's location at the intersection of two main thorofares. Also shown is the V-shaped attraction board which stands in an island of grass. Right, four lanes lead to two boxoffices and the administration building. The manager's office is on the second floor.







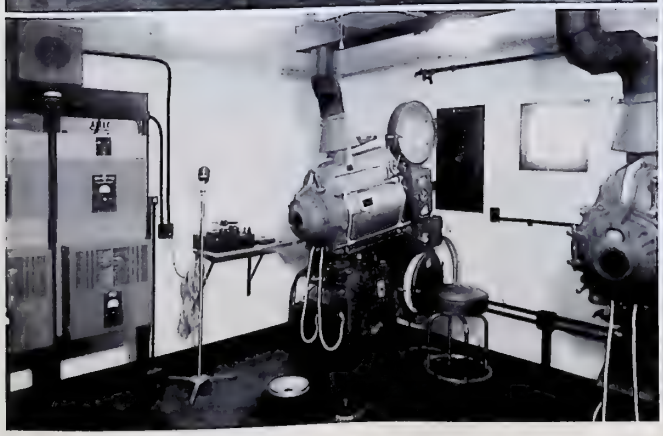




BOTH SIDES OF THE RAMP AREA are displayed above, also showing a portion of the waiting area at the right. **BELOW** is a view of the refreshment stand and projection room building. Here is the 40 x 60 feet concrete dance floor available for intermission dancing. Below, right, the interior of the concession stand where ice cream, soft drinks, beef and pork barbecue sandwiches and coffee are served. The pin-ball machine helps while away intermission time. Bottom, looking towards the projection room and concession stand building from the screen tower. Shown here is the fenced-in grass covered playground area as well as seats for walk-ins. Also visible are the two 50 feet poles from which sodium vapor lamps provide moonlight lighting covering the theatre area. Bottom, left, the modern, tile floored projection booth.











The Valley Drive-In

Ontario, California

Notable among the many drive-ins opened last season was the Valley Drive-In, situated on the main highway linking Ontario and Pomona, California. This outdoor showplace with an asphalt paved parking field has a capacity of 672 cars. The population of the drawing area is about 100,000. Farmers and factory workers account for the majority of the populace. Theatre policy is double feature and plays subsequent to both Ontario and Pomona. Graceful palm trees form an integral part of the landscaping and on the 80 foot screen tower, which is incorporated into the entrance area, is depicted a scene from the rich Spanish history of the locale. At night this mural is illuminated by 2,500 feet of neon tubing. The screen tower itself is constructed of Robinson decking and stucco. Palm lined lanes lead to the streamlined glass and stainless steel boxoffice. For those walk-in patrons a section of 300 stadium chairs has been provided. This section is separated from the parking area by metal fencing. Another feature provided by the management is a fully equipped playground for restless children to amuse themselves while their parents enjoy the show.

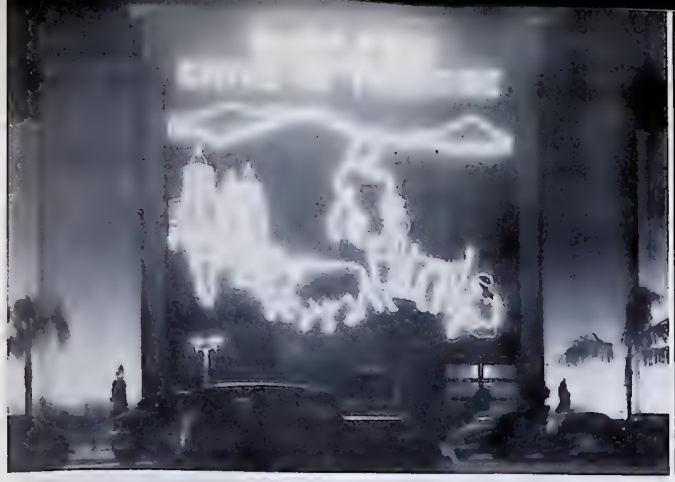
The concession building is constructed with gunite while the interior of the rest rooms are surfaced with tile.

The distances between speaker posts are 18 feet and 38 feet between rows, all these posts are provided with low level lights on DC so sound is not affected.

A large parking bay is provided, also, so that cars waiting for entrance into the theatre will not block traffic on the adjoining highway.

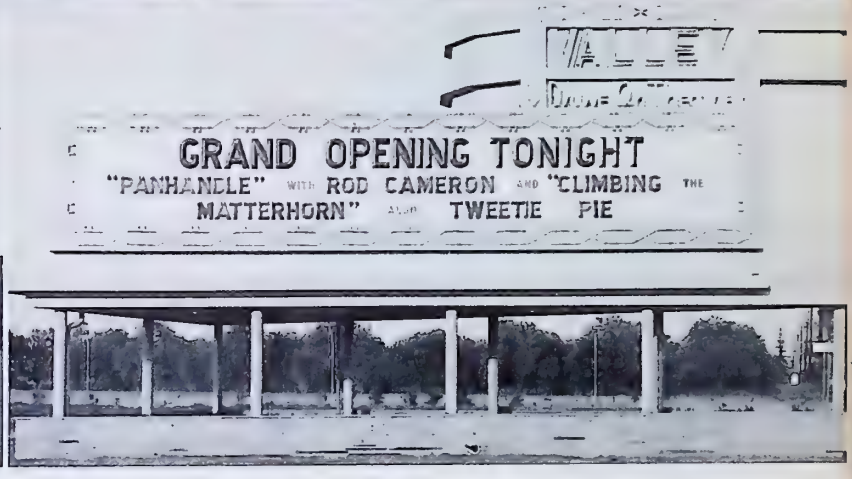
REFERENCE DATA

OWNER & OPERATOR: Valley Drive-In Theatre Corp.
ARCHITECTS: Bryant & Balch.
CAR CAPACITY: 675.
COST OF THEATRE: $350,000.
COST OF EQUIPMENT: $50,000.
SIZE OF LOT: 15 acres.
CHANGEOVERS: Strong "Zipper", by Essannay Electric Mfg. Co.
COINCHANGER: by Johnson Fare Box Co.
DISPLAY FRAMES: Aluminex, by Theatre Specialties, Inc.
GENERATORS: by Hertner Electric Co.
IN-CAR SPEAKERS: Simplex, by International Projector Corp.
LENSES: by Bausch & Lomb Optical Corp.
PROJECTION LAMPS: Peerless Hy Candescent, by J. E. McAuley Mfg. Co.
PROJECTION MACHINES: Simplex E-7, by International Projector Corp.
SIGN LETTERS: Bevelite, by Theatre Specialties, Inc.
SOUND: Simplex 4 star, by International Projector Corp.
SUPPLY DEALER: National Theatre Supply Co.
TICKET ISSUING MACHINE: by General Register Corp.





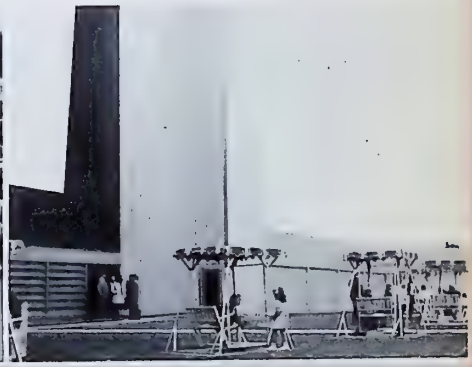




ON THE INSIDE the parking ramps and surrounding area have an asphalt surface, this facilitates drainage and also makes walking to and from the rest rooms and stands much easier. A modernistic fenced-in space contains the playground equipment for children, complete with swings. The concessions' building contains the soda and candy counter, the light baffles at the window openings permit cheerful illumination within but subdue any distracting glare which may annoy the patrons watching the movie.

ON THE OUTSIDE the night views show the attractive appeal of the entrance mural and attraction sign. The effective use of spots highlight the palm trees and the fluted wall of the screen tower which laces the highway. While the drive-in is primarily a nighttime operation these appurtenances are striking even in daylight. The lane leading to the boxoffice is paved and the surrounding grounds are landscaped, the glass cashiers' booth is illuminated at night with neon tubing.

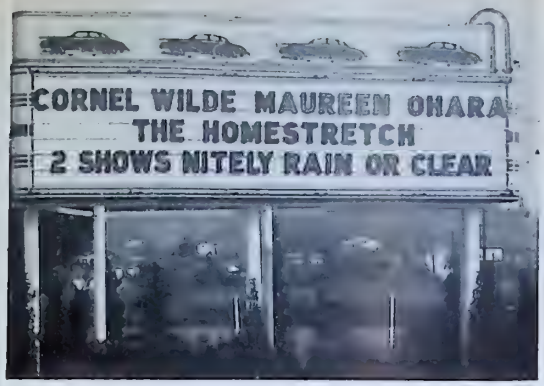














The Family Drive-In

New Kensington, Pennsylvania

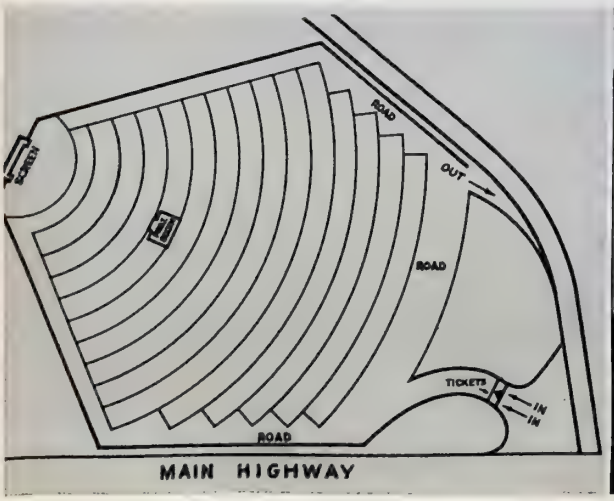
Designed for a drawing area of some 200,000 working class patrons, and operating on a scale of 60 cents for adults, with children-under-twelve free, the Family is true to its name.

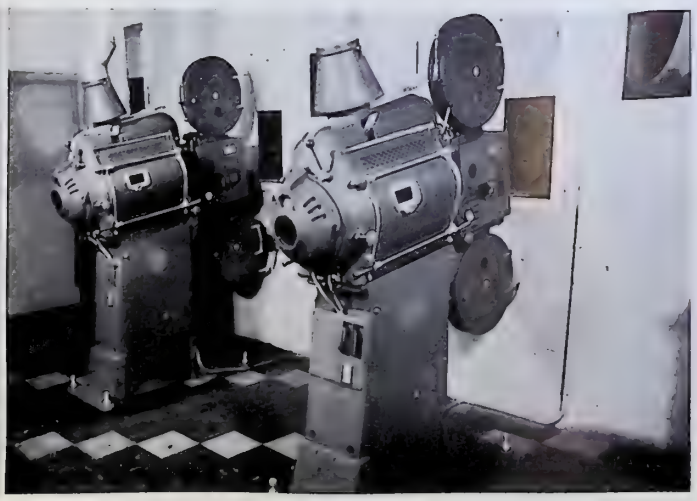
The entrance pylon is 47 feet high with neon letters three feet high spelling out the title, while under it the manager's office connects the two large boxoffices. Large waiting areas are provided in front, with an animated attraction board doing the show-selling.

The screen tower built on poles that are three feet wide at the base and tower 75 feet into the air is covered with transite sheets; and, reminiscent of its roofed sister theatres, is situated at the "back wall" of the plot. The fencing is of aluminum sheets, and combination confection and projection building is built of the usual block.

REFERENCE DATA

OWNER & OPERATOR: Family Drive-In Theatre Corp.
ARCHITECT: Robert F. Beatty.
CAR CAPACITY: 750.
COST OF THEATRE: $171,000.
COST OF EQUIPMENT: $20,000.
SIZE OF LOT: 20 acres.
IN-CAR SPEAKERS: by DeVry Corp.
PROJECTION LAMPS: by Strong.
PROJECTION MACHINES: by DeVry.
SIGN & MARQUEE: by Jenkins Sign Co.
SIGN LETTERS: by Wagner Sign.
SOUND: by DeVry Corp.
SUPPLY DEALER: Lovett & Co.





THE PLOT PLAN shows the unusual adaptability of this road junction to the needs of a drive-in theatre. The projection booth is modern.



REFERENCE DATA

OPERATOR: Charles Albert.
ARCHITECT: Frost Carvel.
CAR CAPACITY: 450.
SIZE OF LOT: 600′ x 800′.
CHANGEOVERS: Strong "Zipper" by Essannay Electric Mfg. Co.
GENERATORS: Robin Imperial, by J. E. Robin, Inc.
IN-CAR SPEAKERS: by Motiograph.
LENSES: Super Snaplite, by Kollmorgen Optical Corp.
PROJECTION LAMPS: Strong Mogul.
PROJECTION MACHINES: Motiograph AA, by Motiograph, Inc.
REWINDERS: by GoldE Mfg. Co.
SIGN & MARQUEE: by Wagner Sign Service, Inc.
SOUND: Mirrophonic, by Motiograph.
SUPPLY DEALER: Modern Theatre Equipment Co.
TICKET ISSUING MACHINE: by General Register Corp.

The San Pedro Outdoor

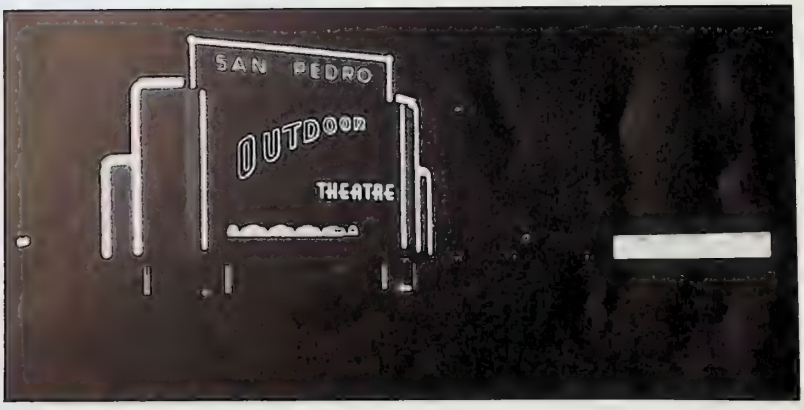
San Antonio, Texas

Situated just outside of the city limits of 250,000 populationed San Antonio, this 450-car drive-in caters preponderantly to a family and juvenile audience that likes outdoor pictures, musicals and westerns. Opened in April, 1948 it commands an admission scale of 44 cents for adults and 12 cents for children, and must play after the surrounding neighborhood theatres.

The large, all metal, attraction board provides adequate show selling space, while the screen tower carrying the painted name signs is also trimmed in gold, green and rose neon for maximum effectiveness at night. The tower itself is encased in metal lathe and stucco, with a base of hollow tile. A modern circular island boxoffice serves the two entrance lanes and most of the ramp area is enclosed in wooden fencing.

Sheet asbestos, heavily coated with white yacht paint provides a smooth, serviceable screen surface, and in front of the first ramp is a bank of metal garden chairs, fed with sound from screen horns, for those who walk in or wish to escape the confining areas of their cars.

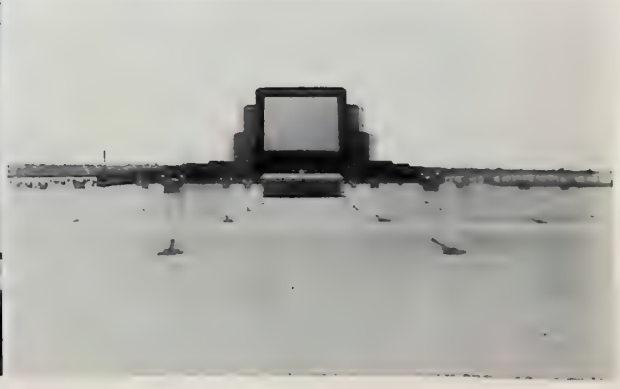
All ramp areas are paved. The projection building, and behind it the confection sales building are of concrete block.



ANIMATION is obtained after dark through the line of neon cars that keep passing along the bottom of the screen tower. It is safe to state that no passing motorist can consciously drive by the San Pedro at night without knowing the nature of the enterprise and the show being offered.



THE SCREEN TOWER backs the setting sun. The projection room is large, well-equipped and ventilated. Note the reverse tilt of the bases.





The Summer Drive-In

Memphis, Tennessee

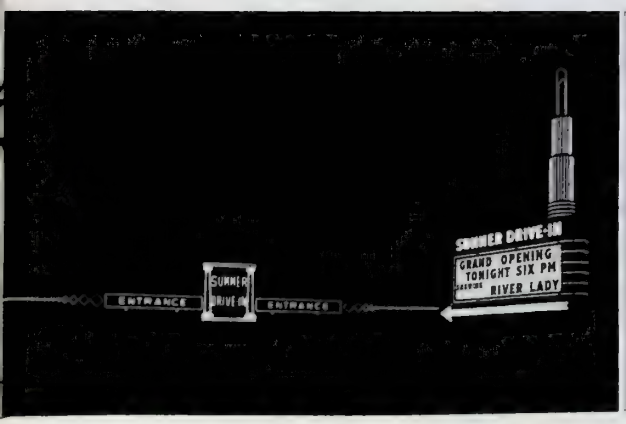
REFERENCE DATA

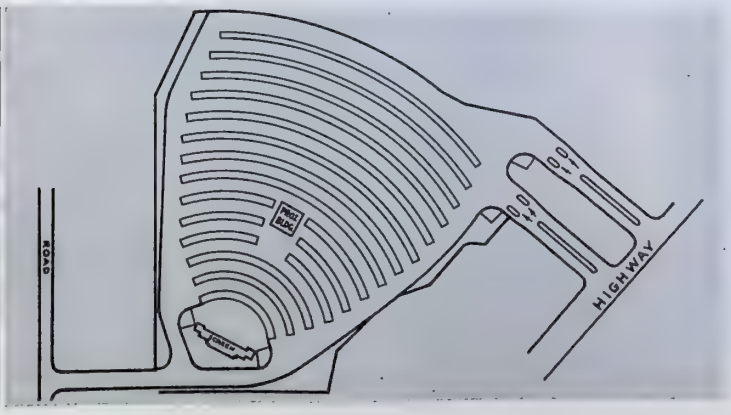
OWNER & OPERATOR: Kemmons Wilson & Associates.
CAR CAPACITY: 670.
COST OF THEATRE: $110,000.
COST OF EQUIPMENT: $25,000.
SIZE OF LOT: 18 acres.
COINCHANGER: by Brandt Automatic Cashier Co.
FILM CABINETS: by GoldE Mfg. Co.
IN-CAR SPEAKERS: by Autocrat, Inc.
LENSES: Snaplite, by Kollmorgen Optical Corp.
PROJECTION LAMPS: Strong Mogul, by Strong Electric Corp.
PROJECTION MACHINES: by Century Projector Corp.
RECTIFIERS: 90 amp., by Strong Electric Corp.
REWINDERS: by GoldE Mfg. Co.
SIGN & MARQUEE: by Balton & Sons.
SIGN LETTERS: by Adler Silhouette Letter Co.
SOUND: by Century Projector Corp.
SUPPLY DEALER: Tri-State Theatre Supply Co.

This southern-area drive-in has apparently uncovered a method for year-round operation regardless of weather conditions. During the months which permit efficient operation of normal drive-in methods the theatre policy will be the showing of motion pictures. However, during the inclement winter months, it won't be necessary to completely close or suffer a major attendance loss.

Utilizing a method which is familiar to many sporting arenas throughout the country, The Summer Drive-In will continue to be a sound investment by providing an ice-skating rink for the citizens of Memphis. Pipe lines, laid on a concrete base, will be used to freeze water over an area of approximately one acre of the drive-in's total 18 acres.

During normal operation 1500 feet of brilliant neon tubing will light the four entrance lanes which face U. S. Highway 70. An exit lane is provided behind the screen which leads to an additional exit road.





Laminated Wood Arches in Theatre Construction

Introduced Here in 1945, at Least Five Theatres Have Now Been Built With Glued Laminated Framing Members

The possible use of the glued laminated wood arch in moving picture theatre construction was originally discussed in the 1945-1946 THEATRE CATALOG. At that time no theatres existed with the laminated arch as an integral part of the edifice. However, the discussion bore fruit and the year 1948 saw the appearance of several new theatres featuring laminated arch construction.

After a consideration of the general aspects of the glued laminated member, including a brief resume of its history, specific theatres utilizing the "wooden skeleton" are described. In short, this section deals with the new role of a revitalized material—wood; and its present and potential value to the entire theatre industry.

Introduction

In the new era of theatre construction, attention is focussed as never before on the novel and unusual in building materials. Among the most interesting and potentially valuable of these are the glued laminated structural wood materials — trusses, arches, rafters, and framing members — which permit the construction of sturdy and economical post-free spans up to 200 feet and more in width. The effects of this new development on theatre architecture in the next few years will be profound.

History

The production of laminated woods began on a mechanical basis in Germany and Sweden in the eighteen-eighties and in this country around the turn of the century. European designers and builders were quick to recognize the potential speed of manufacture, practicability, and economy of construction inherent in the new material.

Early European uses of glued-laminated construction appeared in the form of foot and canal bridges, hangars, railway shop and station-platform roofs, nursery and factory roofs. And in the middle nineteen-thirties, American companies, fortified with the knowledge obtained in fruitful research at the efficient U. S. Forest Products Laboratory, began manufacturing wood laminated garages, stores, recreational buildings, hangars, warehouses, many varieties of farm buildings and more recently — moving picture theatres.

Large scale use of laminated trusses and framing members in the construction of auditoriums started and gained momentum during World War II with the building of hundreds of chapels, theatres, and recreation halls at army, navy, and marine corps posts. Some unusual and beautiful architectural effects were obtained, especially in the construction of religious chapels, but the most important advantage of these products during the war years was the great saving in time, labor and materials their use made possible.

It was during the war years, too, that a tremendous increase in the use of glued and laminated wood units in the construction of large industrial plants, farm buildings, and huge, post-free aircraft hangars occurred. Many of the lessons that were to be applied later to the building of new moving picture theatres were learned in the crucible of war-time experience.

What Lamination Does To Wood

Actually, of course, laminated building materials are a new and different form of one of the oldest of building materials: wood. Wood per se suffers from several serious limitations — its strength is far below that of steel or concrete, it is not isotropic, it is not uniform in texture or strength, it is usually not suitable for large or complex structures.

However, when layers of wood are bonded together with resins in sandwich form, a minor miracle takes place. The natural tendency to shrink, swell, and warp is effectively neutralized and the unique properties of: — h i g h tensile strength, high compressive strength,

BELOW: laminated arches, 152 feet in width, provide a rugged and economical framework for a theatre auditorium with desirable acoustical properties and design possibilities.



flexibility, immunity to fatigue and vibration—are ideally realized. In its resistance to mechanical, physical and chemical attack, glued laminated wood is in most respects equal and in some superior to steel. In the critical strength-weight ratio, it probably surpasses any known material.

With the development and perfection of synthetic plastic binders which are moldable, the same possibilities were introduced into laminated wood structures that Maillart exploited in ferro-concrete. The new binders possess unusually great adhesive strength, in fact, under severe loading, the wood itself will fail before the joined pieces give way. Resistance to sliding and shear is as great between the layers as within the wood itself. And with many new plastic binders, the laminated unit is rendered resistant to fire, moisture, fungus, and insect attack.

Wood Is Fire-Resistant

After a long period of dominance by monolithic, steel-and-concrete construction, theatre architecture is beginning once more to favor wood and surprisingly enough, because of its fire resistance. Specialists in theatre design have seen steel-framed buildings totally destroyed by fire as the steel girders writhe and twist in the fierce heat, lose strength, pull down the walls and cause the roof to collapse.

On the other hand, they have noted how heavy laminated wood framing can help keep a building structurally intact during a bad fire; the laminated framing will char, but this is frequently a surface phenomenon that retards destruction. The strength of the framing is only slightly impaired. Fire-proofing of the glued laminated framing member can be effectively accomplished by impregnating or coating the wood members with a fire-retardant, and joining the laminations with a non-inflammable binder.

Design Possibilities

The glued laminated arch most popular for theatre construction consists of two rigid half sections bolted or hinged at the crown. Roof support and vertical column, being identical, provide far greater stability than do separate trusses and supporting columns artificially connected. Construction is simplicity itself. Glued-laminated rafters go into place speedily and easily without the use of highly specialized building mechanics and equipment. And the availability of a large variety of such forms provides the theatre builder with a large diversity from which to choose.

New design possibilities are opened up by this new and greatly simplified method of clear-span theatre construction with factory-fabricated roof trusses, arches, beams and continuous structural members. Delivered to the job-site ready for fast erection, these built-up members escape the old limitations imposed by the size and shape of the log; and provide for a wide clear span. Their use makes possible artistic and graceful interiors; and their spacing at regular intervals establishes a spatial pattern of strong rhythmical accents.

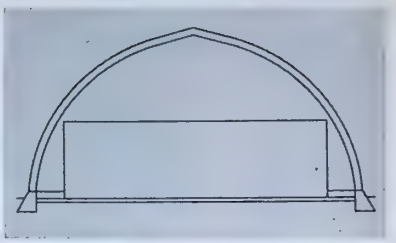
Nor is the factor of strength ever ignored. The modern metal timber connectors (split rings, shear plates and other types) used in assembling these trusses and framing members develop 80 per cent or more of the working strength of the wood, as compared with 40 to 60 per cent developed by the bolt, rod and gusset plate method. At the same time, there is a big saving in steel, since under certain conditions, one pound of metal connectors replaces eleven pounds of steel bolts, nuts, rods and plates.

Conclusion

The traditional advantages of wood—its high insulation value, its workability, sound-deadening properties, durability, aesthetic value—are present in laminated wood together with the additional benefits of economy in time, labor and materials. It can be used to good effect without further finishing or, if desired, it can be easily and effectively decorated. The typical simplicity of the glued laminated arch facilitates theatre decoration by providing freedom from cobweb trusses which interfere with ceiling height, treatment, lighting and ventilation. Used as an integral part of an all-wood room, the laminated arch forms the basis of a motion picture theatre auditorium with the finest acoustical properties—and this is possible without the installation of special acoustical materials. To sum up, the multi-ply laminated wood arch is an important new material in theatre construction, both functionally and aesthetically, and can be used to good advantage in new building, especially when costs must be held to a minimum.

Typical Examples In Theatres

Now that restrictions have been lifted on theatre construction, new commercial theatres built with laminated trusses and framing members are beginning to appear around the country. These examples have been confined mostly to smaller theatres, a field in which laminated wood construction is apparently destined to become prominent because of its outstanding success and the economic factors involved in modern theatre construction.



TYPE 54 Rilco Arch Rafter provides continuous framing from foundation to roof ridge, permits unusual flexibility in interior decoration.



TYPE 62 Rilco Bowstring Truss, utilized in wide-span construction. In this truss, the top and lower chords are glued-laminated members.



TYPE 70 Rilco Tied Rafter. This light-weight member provides great structural strength wherever wide post-free spans are desired.

CAPITOLA THEATRE, CAPITOLA, CALIF.

Owners: Arthur Mayer and Joseph Jacobs, San Francisco, Calif.
Architect: Harold Onstead, San Francisco, Calif.

Long a summer mecca for vacationists and latter-day hedonists, Capitola, California, until 1948 was a town without a theatre. For years the little West Coast city did a land-office business during the summer months only to hibernate through the other three seasons, marking time until the next wave of summer seashore visitors energized the local scene. For amusement, both visitors and residents could take their pick of ocean beach, dance hall, skating rink and the usual beach attractions . . . but no theatre. Faced with the ultimatum that the entire investment would have to be supported by business whipped up in the summer months, theatre men avoided Capitola in favor of greener pastures.

However, with the increase in permanent residents (part of California's war legacy) as an incentive, two San Franciscans who had been constant summer visitors and who were property owners in the community, decided in 1947 that the idea of a theatre was feasible, if the capital investment could be held within reasonable limits.

As soon as this condition was admitted, a possible dilemma presented itself. The planners were well aware that following the dictates of low cost construction might result in sacrifice in audience comfort, acoustics and appearance. Such a sacrifice would be detrimental to business but, conversely, the comparatively weak drawing power of the locale did not justify heavy expenditures.

To resolve the dilemma, the San Franciscans, Arthur Mayer and Joseph Jacobs spent a year in research, in observing small theatres throughout the United States and in comparing the results obtainable from various kinds of construction and material. A capable architect was selected to draw up the plans and then began a series of conferences with theatre equipment suppliers, insurance underwriters, heating, ventilating, electrical and structural engineers, as well as other technical men, and the all-important contractor. So diligently did Mayer and Jacobs labor that the final plans were ready long before the removal of restrictions on April 1,

1948; and the Capitola was opened on August 6, 1948—four months and one week after building restrictions were removed.

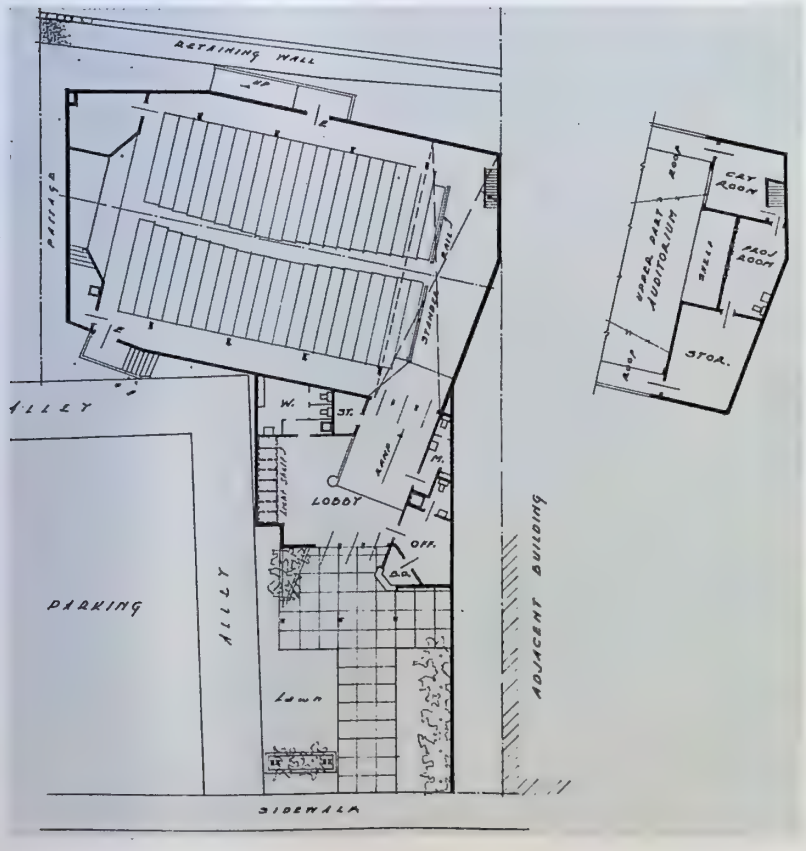
The long period of research paid off in lowered construction and equipment costs, a true economy come by honestly without any compromise with patron comfort or enjoyment. Cost of the building, not including equipment was $51,372.89; while the equipment itself, not including air conditioning, totaled $17,000.

Materials of construction included: basalt concrete building block, brick, reinforced concrete and steel, and the laminated arch. In selecting the laminated arch for the support of the auditorium roof, Mayer and Jacobs not only provided a wooden skeleton with the strength of a structural steel framework for the building but also gave it one of its most distinctive features. Fabricated and installed by Timber Structures, Inc., the glued laminated arch was no newcomer to architecture but its utilization in moving picture theatre construction first received serious consideration in the fourth annual edition (1945-1946) of THEATRE CATALOG.

It was this treatise on the advantages of the laminated arch for use in theatre construction, according to Mr. Mayer, that played a dominant part in its selection for the Capitola. Its strength, beauty and low cost made it the ideal material, and the curved ceiling erected over the semi-cylindrical framework produced a decided acoustical advantage. No special acoustical materials were required because of the use of air chamber basalt blocks for the sidewalls of the auditorium, U. S. Gypsum wall board tile for the ceiling, and, finally, because of the obvious acoustical properties of a semi-cylindrical hall, the laminated arch.

In the Capitola Theatre, the glued laminated arches were left in their natural color, varnished and exposed below the ceiling. With a radius of 24 feet, the apex of the arch attains an approximate height of 27 feet. The span at the base is 48 feet, a width which allows satisfactory space for both seats and aisles. Five arches placed on 16 foot centers make up the roof support; and 2" and 8" purlines connecting the arches form the frame work for the roof sheathing and ceiling. The ceiling itself is made of U. S. Gypsum board in 16" x 32" tiles applied to battens. Set in parallels, the surfaced tiles required no additional finish.

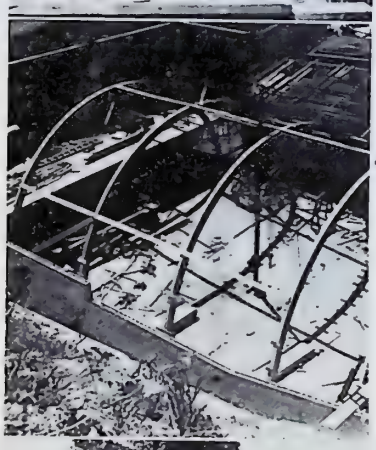
DIRECTLY BELOW is the architect's floor plan of the Capitola Theatre. On the right— 1. The ground is broken and footings poured. Note that the masonry walls serve as forms for reinforced concrete posts. 2. The use of 6" building tile over the 8" concrete block provided fire-resistant walls and substantially reduced insurance premiums. This important structural element is not visible to the public. 3. Framing for the concrete beam between foyer and auditorium. Basalt concrete building blocks provide an air-chambered wall which requires no additional plastering inside or out. 4. The walls take form. At this stage of construction, considerable thought and work had been devoted to the Capitola.













Watching closely for any phase of construction which might offer the attraction of low first cost but at the same time conceal a disastrously high long-term operational expense, Mayer and Jacobs carefully examined the intricacies of insurance rates. In much building, the usual practice is to meet the requirements of all existing fire codes and to call in the insurance broker after the building is completed. However, the owners fully realizing that this procedure can prove costly, wisely reversed the sequence and called the insurance rate bureau for consultation during the preliminary planning stage.

The bureau immediately informed Mayer and Jacobs that Capitola, in common with many small cities, had a high insurance rate. Furthermore, their theatre, flanked on one side by a dance hall, was subject to a high exposure charge. Steel and concrete construction would have lowered the exposure charge but the reduced revenue of three slack seasons out of four did not justify the additional cost.

Through the counsel of the insurance rate bureau, a wall meeting their approval was specified and incorporated in the building plans. Where the actual exposure hazard existed, the wall was constructed of one layer of 8″ basalt concrete block with an outer layer of 6″ fired hollow tile, making a double wall with a total thickness of 14″. In areas not visible to the audience, an 8″ brick wall meeting all requirements for reducing the exposure charge was permitted. Brick was also used in the projection room and the cry room.

The insurance bureau also suggested two projecting wings of brick for the curved roof of the auditorium as protection against exposure. While this additional construction increased the original building budget, it is estimated that the reduced insurance premiums will more than make up the difference in a few years' time.

In determining the Capitola's size, a capacity of 500 seats was decided upon as being the best balance between the population the theatre would serve—5000 mature, well-educated citizens who prefer Hollywood's quality goods to its horror, crime and Western potboilers—and the amount of the investment. These seats, for which Capitola adults pay 65 cents, juniors 50 cents, and children 20 cents, tax included, are laid out in two sections of equal size, with one center aisle and two side aisles. The center aisle is angled to accommodate a staggered seating arrangement. To give visual depth and a spacious appearance to









LEFT COLUMN— 1. The projection room balcony rests on steel bearing and posts. 2. Arches arrive on the job site in two sections, are fabricated into one piece while on the ground and then hoisted into place by the jig pole. Gusset plates which key the arch segments are unnoticed in the finished interior. 3. Laminated arches already in place. As the roof goes up, the Capitola Theatre takes form. 4. A ground level perspective of the auditorium walls and arches. Right column—5. Projection and crying room balcony with steel supporting posts. The wall here cups around the end of the curved roof as an exposure protection from the fire hazard of adjoining dance hall. 6. Glued wooden laminated arches spanned with 2x8 purlines; aisle roofs sloped to pitch of floor. Note brick wing to protect roof from fire exposure hazard. 7. Arches and purlines prior to adding the bridging between purlines. 8. Looking at purlines from the outside.

the theatre auditorium, the side aisles have been placed beyond the base of the arches. Soffits above the side aisles protrude beyond the inner face of the arch, forming a ceiling over the side aisles and a light cove for illuminating the auditorium. All three aisles are designed to facilitate handling the flow of traffic, and for easy egress, side exits empty into exit courts.

The Capitola Theatre occupies an L-shaped lot in the main business section of the city. One of the arms, the entrance, measures 86 by 40 feet; the other, the auditorium arm, is 75 by 92 feet. Lawns, shrubbery, trees and planting boxes create a sylvan setting for the theatre front. Behind this miniature park and at a distance of thirty feet from the sidewalk are the marquee and the box office of the Capitola. The marquee is illuminated at night with recessed mirrored spots properly spaced to produce the necessary brilliance for an attractive entrance with sales appeal. Detached from the building, a reader sign at the edge of the sidewalk makes an effective display board for coming attractions.

Both marquee and box office are constructed of California Redwood with California Part Costa brick as a wainscoting base. The same materials are carried in an unbroken wall into the inner lobby, extending the full length of one wall. The lobby has three sets of double doors leading from the outside and a corresponding group from the lobby to the auditorium.

With a floor constructed of 12" x 12" quarry red tile and walls of redwood, brick, and basalt blocks painted a bright yellow, the lobby is a cheerful, spacious room which can accommodate a full traffic load at peak capacity and without interfering with the flow of business provide ample space for candy, popcorn and soft drink sales. Illumination of the lobby is provided by two light shelves equipped with strips of Federal Striplight Cold Cathode tubes. Two mirrored spots focus attention on the refreshment stands and contribute a potent psychological impetus to sales of these lucrative commodities.

Adjoining the lobby are offices, lounge and toilets, harmoniously decorated with basalt blocks, yellow walls and in common with the lobby, floored with red tiles. Leading from the lobby to the foyer is a 16 foot wide ramp, covered with Rubberlock rubber floor covering in a color which matches that of the lobby tiles. The rubber surface is corrugated as a precaution against slipping. Above the foyer are the cry room and the projection room. The entrance to the foyer is at a right angle to the auditorium since the building, as already mentioned, is an L-shaped edifice.



PICTURES ON THE RIGHT — 1. Soffits form the aisle ceiling and provide a light cove for interior illumination; arches stand free with aisle beyond. 2. A view of the upper side of the aisle ceiling construction shown in the previous photograph. This aisle roof is sloped to the pitch of the floor. Note the brick firewall and chimney. 3. Diagonal roof sheathing on the auditorium of the Capitola carries lateral forces to points of support. 4. Another view of the diagonal roof sheathing. Adjoining the building site is a dance hall, a frame building considered a high fire exposure risk by insurance companies. Monterey Bay forms a picturesque background to the handsomely constructed Capitola Theatre of Capitola, California.

While simplicity is the keynote of the entire building's interior decoration, the use of color prevents any occurrence of the decorator's headache—drabness. For example, the front doors are painted light blue on the outer panels; and lined with red leatherette on the inside. The doors between inner lobby and foyer are covered with red leatherette on both sides and glass ports are placed in each door. The lobby walls, other than the combination redwood and brick wall are painted bright yellow.

Basalt concrete building blocks were chosen for all walls that had both interior and exterior exposure. The air-chamber insulation of the blocks which was found to be fully effective with no further exterior or interior finishing, eliminated the necessity for plastering. In the auditorium interior, the basalt blocks were finished in a strong green.

Red seats and matching carpets form an effective color scheme in the auditorium. On the audience side, the projection room, cry room and the stage are painted with a warm-toned flat interior wall paint. Incandescent lights in the soffit troughs are yellow, bathing the cream-colored curved ceiling of the auditorium with a mellow, yellow glow.

Heating, when required, is supplied by warm air forced under pressure through Anemostats in the ceiling. The motivating fuel is natural gas. Cold air returns through vents beneath the stage. Ventilation can be varied by the use of two exhaust fans, one over the stage and the other in the foyer ceiling. Both the outer lobby and the office have a warm air heating plant independent of the auditorium heating and ventilation.

All equipment for the Capitola was supplied by one organization, the Walter G. Preddy Company, of San Francisco. The listed items prove convincingly that economy of investment does not necessarily mean omitting quality equipment.

Furnishings

Carpets: Mohawk #997-35, by Mohawk Carpet Co.
Chairs: Irwin Seating Company.
Draperies and Stage Curtains: Velour.
Rubber Mats: Rubberlock, by R. L. Mitchell Rubber Company.

Projection

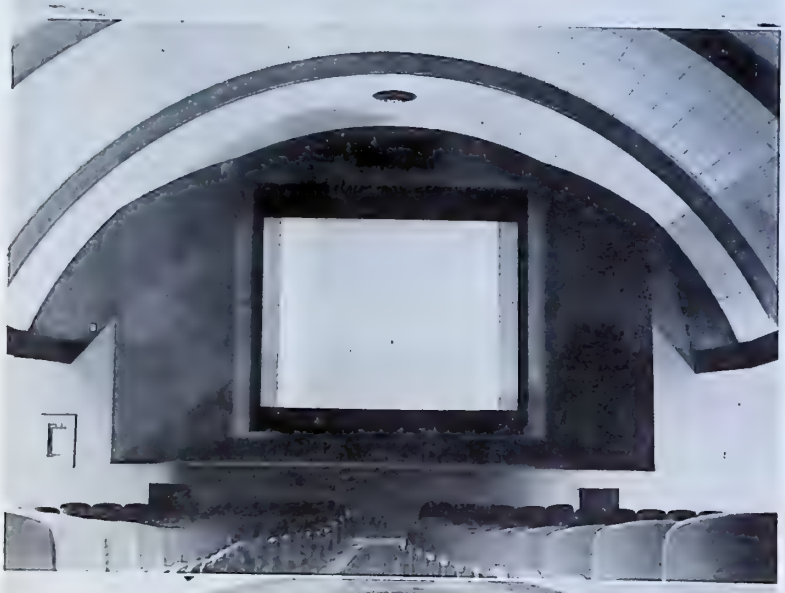
Changeovers: Weaver Dousers, by Weaver Mfg. Co.
Film Cabinets: Nu-made Products Co.
Lenses: Kollmorgen Optical Corp.
Projection Lamps: Strong by Strong Electric Co.
Projection Machines: Century, by Century Projector Corp.
Rectifiers: Strong, by Strong Electric Co.
Rewinders: Goldberg, by Goldberg Bros.
Screen: Viny-lite, by Vocalite Screen Company.
Sound: Century, with Altec Lansing Speakers.

Display and Boxoffice Equipment

Coinchanger: Johnson, by Johnson Fareboy Co.
Display frames: Redwood.
Sign and Marquee: 30 M. A. Neon Theatre Name Sign.
Sign Letters: Adler, by Adler Silhouette Letter Co.
Ticket Issuing Machine: GoldE, by GoldE Mfg. Co.

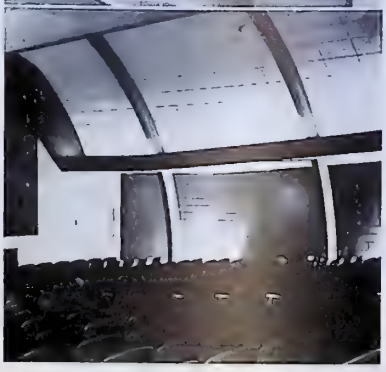












RIGHT COLUMN—Lobby floor is of red quarry tile; concrete block walls are painted bright yellow; and light shelf is California redwood with cold cathode lighting. Brick wainscoting protects lobby walls against damage. Auditorium ceiling is cream pre-finished U. S. Gypsum board tile. Left column — Set back from the sidewalk, the Capitola is an attractive setting of lawns and planting boxes. Angled aisles permit staggered seating arrangement. Wide foyer behind standee rail permits many standees without crowding.

HARDEN THEATRE, CALLICOON, NEW YORK

Owner: Fred Starch
Architect: Lacy and Son, Binghamton, N. Y.

Structurally, the glued laminated arch has proved its merit; decoratively, its possibilities are unlimited. Standing as it does on the threshold of a new career in the world of the moving picture theatre, the laminated wood unit offers designers the promise of a unique art in the decoration of the theatre interior.

On the banks of the Delaware in Callicoon, New York, the Harden Theatre has integrated the wooden arch into an interior decor of exceptional beauty. Here the typical semi-cylindrical form of auditorium is preserved but the arch, which in some adaptations projects into the auditorium space purposely, is almost entirely concealed. Only a shadow pattern suggests its presence as a functional member of the structure.

The ceiling and sidewalls have been finished with 12" white celotex tiles set in the same plane as the inmost side of the Rilco rafters, creating a rhythmic pattern of white space broken at regular intervals by areas of light brown celotex planking over the laminated rafters. Thus a novel decorative pattern has been formed by architectural understatement and an effective utilization of the arch has been developed.

The Harden Theatre, owned by Fred Starch, operated by H. D. English, and managed by Ray Dexter, Jr., opened in the main business section of Callicoon on July 8, 1948. Built on a plot of ground 52 feet by 140 feet, the Harden seats 514, charges 60 cents admission to first run pictures of which quality Westerns and musical comedies are the most popular items.

Exclusive of equipment, the Harden Theatre cost its owner about $40,000. For this investment, Fred Starch received a compact, sturdily constructed building ideally suited to the needs of the community which it serves.

Rilco rafters sheathed with Y.P. roofing form the shell of the auditorium. Roof asphalt shingles cover this framework and insulation for the auditorium is provided by rock wool bats. The floor and the foundation of the Harden are made of concrete, while the important front wall utilizes 16" cinder blocks—some artfully recessed to form a simple but striking pattern—finished with white plasteron. Decorative woodwork on the front is painted maroon.

A large H at the front of the marquee is illuminated at night by cold cathode lighting. Above this literal symbol and atop a tower, a sign using letters two feet high spells out the name of the theatre. The marquee itself, although comparatively small, presents a large fund of information in its three rows of 10" red and blue translucent letters on three sides. The marquee is illuminated by pink, green and white cold cathode lighting. R 40 lights in the soffit serve as down lights.

After getting advance information on coming attractions from the 40" x 60" illuminated metal display signs, Harden Theatre patrons walk up a slightly inclined concrete ramp to the dual entrance doors and, inside the lobby, find a floor finished with maroon and green asphalt tiles laid patternwise and bounded on four sides by a border. In the foyer, to suggest a transition to silence, a red carpet takes the place of the floor tile. In both lobby and foyer, a leather-grained hard board forms the wall below the dado line while 12" celotex tile serves as both decorative and acoustical material in the area above the dado and on the ceiling.

A similar scheme is carried out in the auditorium, with the presence of the laminated wooden arches adding zest to the decorative effect. Below the dado line, plywood—close relative of the laminated arch in its composition—forms the sidewalls; above the line, 12" white celotex tiling alternates with light brown celotex planking over the regularly spaced arches to give an attractive decor. The back wall above the dado line is made of standard celotex board. At the front end of the auditorium, the proscenium is finished in two shades of light brown celotex and plywood, this combination harmonizing with the color scheme of the sidewalls. On stage, the silver screen curtain is framed by a red plush contour curtain. This color scheme is continued in the red plush valances over exit doors, red carpet and chairs, and the woodwork of the auditorium which is stained a blending shade of red.

Lounge and toilet rooms have sidewalls of prefinished light blue hard board and ceilings of panelled wall board. Floors are of maroon asphalt tile.

Equipment for the Harden was supplied by National Theatre Supply, Albany, N. Y., Manager—W. J. Hutchins.

Furnishings

Acoustical Material: 12" Celotex Tile.
Carpets: Raddicliffe Wilton, by Thomas Leedom Company.
Chairs: Bodiform, by American Seating Co.
Curtain Controls and Track: Automatic Device Company.
Decorator: Bil-Art Studios, Inc.
Draperies and Stage Curtains: Bil-Art Studios, Inc.
Lighting Fixtures: Voight & Lightolier.
Rubber Mats: U. S. Rubber Company.

Projection

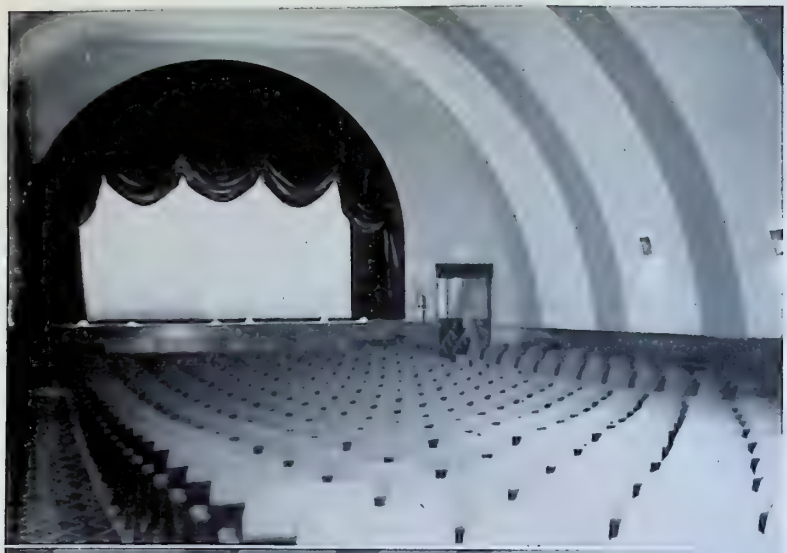
Changeovers: Dowser Manufacturing Corp.
Film Cabinets: Neumade Products Co.
Lenses: Coated, fast. Snaplite by Kollmorgen Optical Corp.
Projection Lamps: Strong-Hi, by Strong Electric Corp.
Projection Machines: Simplex E-7, by International Projector Corp.
Rectifiers: National, by Strong Electric Corp.
Rewinders: Hand and Automatic, by Goldberg Bros.
Screen: White plastic, by Walker-American Corp.
Sound: Simplex E-7 by International Projector Corp.

Display and Boxoffice Equipment

Display Frames: Sealuxe, by Universal Corp.
Sign and Marquee: Leray and Company.
Sign Letters: Blevelite, by Theatre Specialties, Inc.
Ticket Issuing Machine: Trigger Action, by General Register Corp.
Ticket Chopper: GoldE Mfg. Co.
Vending Machines: Popcorn, by Manley; Candy Case, by Columbus Cabinet.

THE HARDEN THEATRE is a good example of modern functional design and artistic theatre construction within a modest budget. Although the finished marquee is not shown, the stark simplicity of line and the unusual effectiveness of rows of plastered cinder blocks are readily apparent.

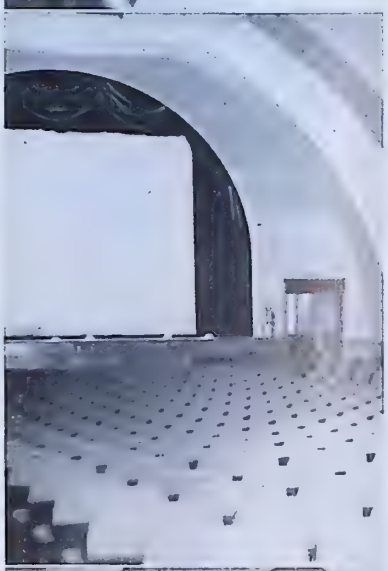














TOP, RIGHT—Auditorium of the Harden Theatre with stage curtain drawn. Left — Curtain open halfway for stage presentations.

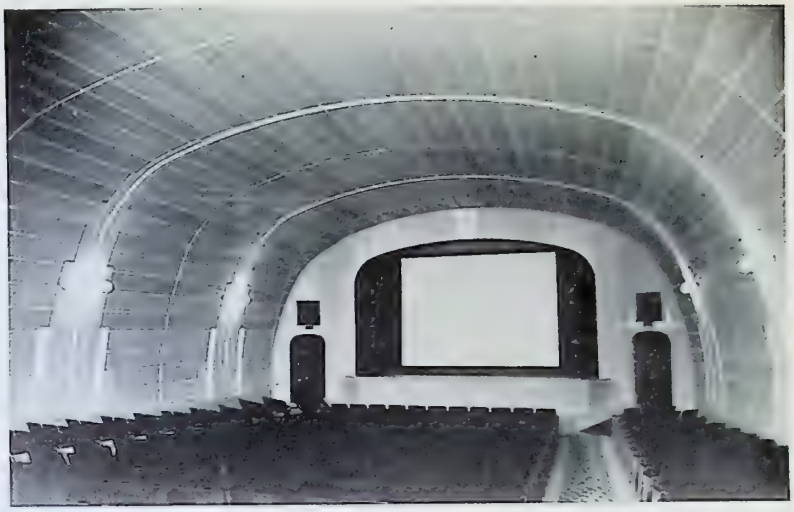
MIDDLE, RIGHT—Curtain completely open. Left—View of the auditorium from the stage. Note how ingeniously the laminated arch is integrated into the theatre's decorative scheme.

BOTTOM, RIGHT—Projection booth with projector ready for action. Left—Foyer and standee space.

ROXY THEATRE, ST. ANSGAR, IOWA

The Roxy Theatre in St. Ansgar, Iowa, illustrates the advantages obtained in the use of a laminated arched framing member which gives continuous framing from the building foundation to the ridge of the roof. The Rilco Type 54 rafter employed completely eliminates the normal joint between the roof and the sidewalls; the walls and roof are, in fact, integrated by this arch into a single structural unit of great strength.

Rilco Type 54 rafters were delivered to the job location shaped, cut, drilled and ready for quick and easy erection. Spaced two feet apart and covered with one-inch decking, these rafters made the use of roof joists superfluous. Special metal angles, bolts and metal connectors anchored the rafters to the foundation and these members were joined at the ridge pole with metal ridge plates and bolts. Giving a clear span up to 70 feet, the Type 54 rafter was an ideal construction unit for the Roxy Theatre.



WALWORTH THEATRE, WALWORTH, WISCONSIN

What is probably a still larger field for laminated wood structurals in theatre construction is that provided by theatre buildings with the conventional vertical walls and flat ceiling. The attractive new Walworth Theatre, Walworth, Wisconsin, demonstrates the application of a laminated unit to this type of building.

The Rilco Type 70 truss was utilized since it provides for clear span construction of theatres up to 60 feet wide. Delivered pre-cut and drilled, ready for easy assembly and fast erection, this truss eliminates the need for roof and ceiling joists since the roof sheathing is nailed directly to the arched members of the truss and the ceiling is applied to the underlying horizontal members. The strength-to-weight ratio of the truss is unusually high, and although it is light, it has great bearing qualities.

Requirements for clear spans up to 100 feet are met efficiently and economically by the Type 62 Bowstring Truss.



KEE THEATRE, KIESTER, MINNESOTA

Another example of theatre construction with the Rilco Type 54 arched rafter is provided by the new Kee Theatre in Kiester, Minnesota. In this theatre, Nu-Wood sheathing over the arch of the rafter produces an interior effect of unusual distinction. The beautiful Gothic arch of the interior formed by the Type 54 rafter is highly practical in theatre construction because of the excellent acoustical qualities inherent in an auditorium built on parabolic lines.

For theatres larger than the Kee, the Type 59 arched rafter, similar in design to the Type 54, is specified. Type 59 is a heavier and stronger rafter, and its use calls for eight-foot spacing and two-inch decking.



Essentials of Lasting, Water-Proof Roofs

Efficient Maintenance of Leak-Proof Roofs Held Economical with New Asbestos Coating

CHARLES S. ALLEN
Manufacturer's Representative

Owners and managers of theatres and other business properties are generally agreed that maintaining a leak-proof roof is a problem.

The main reason for this is well illustrated by the slogan which used to be employed by a manufacturer of men's garters: "If you had to wear your garters around your neck, you'd buy clean ones more frequently." The parallel with roofing difficulties lies in the fact that if the cash customers had to see the roofs, much more attention would be given to their condition and appearance, which would work a revolution in the roofing business and automatically solve the problem.

One of the most frequently encountered conditions contributing to the owner's difficulties is that, as a rule, he waits until the roof is leaking before doing anything about it. He then often finds that the kind of roofing which would have his first choice is not available and he has to take anything he can get in the emergency.

Even if the owner exercises prudence in anticipating his roofing needs, he is confronted with the numerous conflicting claims of the sellers of even more numerous kinds of roofing materials.

It is to simplify this latter condition that this analysis is offered.

The fundamental weakness in present day roofing is the employment of multiple-unit roofing materials. It does not require the possession of scientific technique to reach the very proper conclusion that every joint, seam, break, or nail hole that is present in the fabricated, multiple-unit roof offers opportunity for absorption of moisture from rains, snows, and even the dampness of the air, causing the material to become distended. When that occurs and is followed by the action of the broiling sun, the explanation for the almost universal warping and blistering of the material, accompanied by opened seams and joints and loosened nails, is readily apparent.

The obvious answer to the difficulty is a one-piece roof — no joints, cracks, seams, nail holes to let the water in — sufficiently elastic to admit of expansion and contraction, under temperature changes (covering a range of some 115 degrees Fahrenheit or more, from zero up).

Superficially considered, the ideal roof covering would be a sheet of rubber, say half an inch thick and the size of the roof, which would be completely water-proof and, at least temporarily, meet the requirements for expansion and contraction. Unfortunately for this hypothesis, however, two unalterably adverse factors intervene: (1) the cost would be prohibitive, and (2) exposure to the sun would soon vulcanize the rubber, causing it to crack.

What, then, is the task of the manufacturer who would give the property owner a satisfactory roof? The answer is, of course, a rubber-like coating which is, first, low-cost; second, completely leak-proof—that is, a one-piece roof; no nail holes, joints, cracks, or seams which the elements will open and convert into leaks—and, third, sufficiently elastic to withstand expansion and contraction, thus insuring lasting service.

ASBESTOS ROOF COATING

Battleship asbestos roof coating, product of the Waterproofing Division of the Panther Oil and Grease Manufacturing Company, is such a new roofing in liquid form, a result of scientific research. Painstaking laboratory efforts coupled with years of practical experience have produced this product which makes a new roof out of the old, and which gives years of water-proofing protection to roofs in all climates.

Using the old roof as a base, the coating is applied, just as it comes from the container, right over the old roof, forming a tough rubber-like, one-unit, seamless, nail-less, leak-proof, and water-proof roof. No heating is necessary.

It is recommended for use on roofs composed of any of the following mate-

APPLICATION OF ASBESTOS ROOF COATING can be made to almost all kinds of roofs—flat or more or less pitched—and constructed of almost any type of material, except shingles of wood and mineral slate. In the event the theatre owner is desirous of applying an aluminum paint, to reflect a lot of the solar heat, this can easily be done, as shown in this picture. The asbestos coating creeps, penetrates, and saturates into cracks and crevices, leaving a rubber-like and mat-like layer on the surface of the roof, whether it be a brand-new one or an old one being modernized.



rials: composition, felt or paper, roll tin or other metal, corrugated iron, concrete or cement, gravel or slag. In fact, it is recommended for virtually all types of roofs usually found on industrial or commercial type buildings. With this coating, these roofing surfaces can be made new without the heavy expense, the dirt, the inconvenience, or the tedious labor that are all a part of rebuilding a new roof. (Battleship is not recommended for wood shingles or mineral slate shingles.)

How It Is Made

Battleship is composed of the finest grade of ingredients and, like high quality house paint and other fine paints, is thoroughly merged and fused into one component unit. The result is a perfectly uniform product that will not permit of air holes or thin uneven consistency. Where such careful mixing processes are used, the resulting even consistency prevents weakness in the surface that would otherwise soon give way and allow innumerable openings and leaks. Thorough machinery mixing and fusing absolutely prevents this. Following the fusing processes, Canadian asbestos fibre is then added for binding purposes. Asbestor fibre, however, cannot bind the coating securely where the consistency is not uniform due to lack of proper fusing. These mixing methods, while more costly from a manufacturing standpoint, are essential to create a roof coating that will hold up and thoroughly water-proof a roof.

The principle of Battleship coating is that its evenly mixed liquid portion penetrates into the "pores" of the roofing surface over which it is applied, giving new life to that surface. At the same time a heavy coat remains above the surface, securely bound by the asbestos fibre, that will shed water like glass and prevent the sun's rays from reaching the foundation of the roof. The coating creeps, penetrates, and saturates into cracks and crevices, leaving a rubber-like and mat-like layer on the surface that is, in reality, a new roof.

Elasticity

The creation of such a one-piece roof is most economically accomplished by the use of asphalt-base roof coating, but first, last, and always, the asphalt must be elastic.

While there are literally hundreds of asphaltic roof paints on the market, those in the industry know that the greater part of the asphalt produced is the residue from the refining of asphalt-base petroleums, generally by what are known as cracking-up processes, which involve the use of acids for separating the lighter elements (gasoline, kerosene, and so forth) from the asphalt base. Here enters the condition which renders all such asphalts useless as practicable roofing material; that is, asphalt has a peculiar affinity for acids, thus retaining in itself the greater portion of those used in such processes, and that fact, by destroying its natural elasticity, renders the asphalt brittle, causing it to crack, when subjected to changing temperatures.

It is the claim of, at least, one manufacturer that its asphalt is not a residue from cracking-up processes, and therefore, retains its natural elasticity and never cracks. Further, a purification process is followed, as all petroleum, as it comes from the ground, contains impurities which have, in the past, presented difficulty in bringing about their separation from the asphalt. In this

ON OLD ROOFS the asbestos roof coating is applied to effect a completely water-proof and leak-proof surface. Here is shown the result of applying the material on a very old gravel-surfaced roofing. First, all the loose gravel and other refuse was cleaned away. Using the old roof as a base, the coating was applied just as it comes from the container, right over the old roof, forming a tough, rubber-like, one-unit, seamless, nail-less, leak-proof, and water-proof roof. A test laboratory reported the material as a high-grade product for use as a brushing consistency roof coating.







AS AN EXAMPLE of before (above) and after (below) the application of this asbestos roof coating, there is presented the case of the Sunrise Building in Rockville Center, Long Island, New York. In the before picture can easily be seen the joints in the old roofing material and the many places where it has earlier been patched. The after picture shows a smooth evenness, with hardly a trace of old roof.

instance engineers employed electronics and found that, by subjecting the asphalt (mixed with water) to 32,000 volts of electricity, there was brought about a satisfactory separation of the water (containing the impurities) from the asphalt, leaving the latter in a pure state, thus preserving its elasticity.

Strength

The next most desirable attribute of a roof coating is strength, which is attained by using a large percentage of long-fibre, Canadian asbestos. A piece of ordinary blotting paper, one-half by four inches in size, showing a tensile strength of about 2 pounds, given one coat of the material, shows a tensile strength of 35 to 40 pounds.

While it is not claimed the coating is fire-proof, demonstrations have been made, with the same blotting paper sample, held in the flame of a match; which indicated that it is fire resistant, and, further, that the heat of the match flame (several hundred degrees Fahrenheit) does not create tackiness or stickiness.

One of the leading testing laboratories of the country reports, on a run-of-factory sample, as follows:

"Condition of material in container: Smooth, homogeneous mixture, no livering.

"Consistency: Brushed coat produces a film of appreciable thickness, with easy application.

"Behavior of coating at 140 degrees Fahrenheit for 5 hours: On smooth surfaced asphalt prepared roofing, no blistering, sagging nor appreciable absorption. On metal panel, no blistering nor sagging.

"Behavior of coating at 32 degrees Fahrenheit for 1 hour: On metal test panel when quickly bent over a one-inch mandrel, no cracking, nor separation of metal and coating.

"The above tests indicate that this material meets the requirements of Federal Specification SS-R-451 for brushing consistency asphalt for roof coating.

"In addition, we made the test shown below:

"Behavior of coating on tin panel when heated to 700 degrees Fahrenheit and immediately plunged into ice water: No harmful effects could be observed. immediately upon withdrawal from ice water, film withstood bending and straightening without cracking.

"Conclusion: In our opinion, this material is a high grade product for use as a brushing consistency roof coating."

Cost

The next element to be considered is cost.

However prettily the roofing people may talk about the technicalities, the real consideration is the dollars and cents the owner is called to lay on the barrelhead.

As a yardstick, let us consider the cost of what is commonly referred to as a five-course roof—that is, two layers of roofing paper, felt, or composition, with three layers of one of the various mastics.

The prevailing price for a built-up roof of that character, in the New York territory, which is fairly comparable to other similar communities, is a minimum

of $15 a square (10 by 10 feet), or 15 cents a square foot.

About 90 per cent of the roofs of business buildings are covered by either metal, paper, felt, or composition. For those the manufacturer recommends that there be used 2 gallons of its coating material to the square. The figures, on that basis, afford an interesting comparison:

Cost of material at $1.27 a gallon	$2.54
Cost of applying, not to exceed $1.25 a gallon (if applied by roofer)—much less if owner uses his own (unskilled) labor	2.50
Total cost a square	5.04
Minimum cost of new roofing	15.00
Net saving a square	9.96
Total saving on roof 100 by 100 feet	$996.00

Warranty

At this point the property owner is likely to have the thought, "Admitting all this to be true, what do I know about the ability and willingness of the manufacturer to make good his representations?" To which the company makes answer that it gives a written guarantee, printed on the customer's copy of each order, which reads:

"Should ..... roof coating be applied according to our simple printed instructions and the account discharged per terms of order and fail to give you roof protection for seven years from invoice date, we hereby agree to furnish at no charge suffcient additional coating for you to keep your roof in a water-proof condition for the full duration of the seven year guarantee period."

In recognition of the fact that in metropolitan centers few property owners have facilities for applying roof coating, the manufacturer's New York office has arranged with experienced and reliable roofers (employing none but union labor and protected, fully, by employer's liability, workmen's compensation and other casualty insurances), for applying the coating at the cost shown above, with provision for the issuance of a certificate by the applier, that the work has been done in strict accordance with the manufacturer's instructions, thus validating the guarantee.

CONCLUSION

A distinct advantage presented by the use of such a coating as is here referred to, is that its repeated use, at stated intervals (7 years), has the effect of building up a more elastic and stronger roof; as contrasted with the ordinary roof covering, the renewal of which latter, at the end of its period of usefulness, is a matter of expense and inconvenience which the owner has no alternative but to more or less regretfully anticipate.

Finally, while the manufacturer says it appreciates that a black roof is not a "pretty" roof, at the same time it has manfully resisted all suggestions to color the product. Its theory, borne out by numerous tests, is that the introduction of any dry pigment (for coloring purposes) into the product, can have but one result—to interpose dry, non-elastic elements into the elastic fibre of the asphalt, thus rendering it brittle and nullifying its essential characteristic, elasticity.

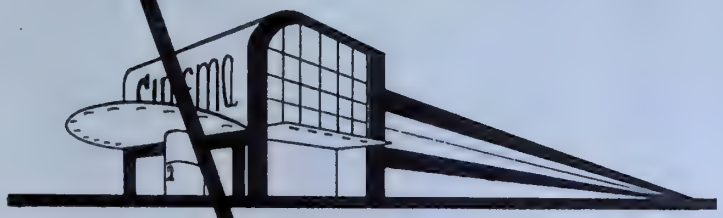




BEFORE APPLYING the asbestos roof coating, the old covering should be closely inspected and all breaks and leaks marked for proper patching. The workers in the picture above are doing this job. In the bottom picture will be seen a close-up of patching before the Battleship coating is used.

CONTINENTAL THEATRE STUDIOS

OUR BUSINESS IS TO STUDY AND SOLVE THEATRE BUILDING AND EQUIPMENT PROBLEMS



- designers
- consultants
- builders
- decorators
- draperies
- fluorescent murals
- equipment installation

METROPOLITAN BLDG. AKRON, 8, OHIO.

Four Reasons Why You Need F & Y to Design Your Theater Project

- The "know how" of knowledge and 32 years of experience in design and construction.
- Integrity of purpose — to build substantially for the future and for low maintenance costs.
- Good customer relationship.
- A low cost producer who spends your dollar as carefully as if it were his own.

"THE BUILDINGS WE BUILD — BUILD OUR BUSINESS"

The F. & Y. Building Service, Inc.

THEATER DIVISION

Specialists in theater design and construction through our own Registered Architects.

328 East Town Street
COLUMBUS 15, OHIO
MAIN 4315

POST WAR THEATER JOBS BY F & Y

Covedale, Cincinnati, O.
Esquire, Columbus, O.
Old Trail, Columbus, O.
Tipton, Huntington, W. Va.
Scott, Scottsburg, Ind.
Paula, Greensburg, Ky.
Lane, Columbus, O.
Skyline Auto Theater, Wooster, O.
Champion, Columbus, O.
Wood, Spencer, W. Va.
Arlington, Indianapolis, Ind. (under construction)
University, Columbus, O.
Dabel, Dayton, O.
Ludlow, Ludlow, Ky.
Madison, Covington, Ky.
The New Linden, Columbus, O.
The World, Columbus, O.
National Auto Theater, Columbus, O.
Valley, Cincinnati, O. (under construction)
Remodeling of The Norwood Theater, Cincinnati, O.
Remodeling of The Hollywood Theater, Cincinnati, O.
Remodeling of The Guild Theater, Cincinnati, O.



Are You Planning a New Theatre?

See a Specialist!

A few of the hundreds of theatres we have built:

Mayfair, New York
Broadway, New York
RKO 58th St., New York
RKO 86th St., New York
Trans-Lux, Washington, D.C.
RKO Palace, Albany
RKO Keith Albee, Boston
RKO Flushing, Flushing
RKO Plaza, Schenectady
Studio, New York
Strand, Utica
Walker, Brooklyn
Loew's State, Providence
Marlboro, Brooklyn
Fox, Philadelphia
Warner Bros. Strand, Bklyn.
Coolidge Corner, Brookline
St. George, Staten Island
Laurel, Long Beach
Shine's Oswego, Oswego
Cataract, Niagara Falls
Loew's Fairmount, Bronx
Loew's Sheridan, New York
Capitol, Jersey City
Embassy, Brooklyn
Rivoli, Roxbury
Strand, Staten Island
Carlton, Brooklyn
Loew's Inwood, New York
Strand, Lakewood
Earle, Bronx
RKO Strand, Far Rockaway
Meserole, Greenpoint
Paramount Casino, Miami
Kleinhans Music Hall, Buffalo

For thirty-eight years, we have been leaders in building America's theatres. This year again, we are at work on many, including the country's largest, most modern postwar theatre: The Calderone at Hempstead, New York.

If you want to build a new theatre or rent one, let us collaborate with you as we have with other owners, operators and architects in planning and arranging financing as well as in construction.

You will then have the full benefit of the specialized experience upon which our past achievements are based and which will enable us to create an attractive theatre for you quickly and economically.



M. SHAPIRO & SON
CONSTRUCTION CO., INC.

254 WEST 54th STREET, NEW YORK

CONSTRUCTION and MATERIALS

1948-49

Remodeling the Theatre

The Economies and Advantages in Effectively Modernizing According to Accepted Practices

1. PLANNING THE WORK

Before extensive remodeling is undertaken, a complete inspection of the building and an operational schedule based on this inspection and existing building codes are recommended for economical and efficient results.

Building Codes

In remodeling an old theatre, the owner will have to comply with the building codes of his community, wherever they exist. This will include provisions for wide exits, well-lighted passages, legal aisles, and stepping, and also certainty that the building itself will not one day cave in. It may well be that modern safety measures never were complied with at the theatre for the very reason that the building codes were drawn up long after its erection. Few codes are retroactive.

In such cases, the enforcing officer is powerless to demand compliance with the new regulations. He is not powerless, however, when it comes to issuing a permit for proposed alterations.

Moderate Improvements

Some of the conditions which might be changed to provide a greater degree of safety for the public but which still could not be made to comply with the stricter code, would include width of the exit courts, seat spacing, fireproof construction, etc. Such conditions, if changed to comply with the letter of the law, would entail too great an expense, with a probable loss of seating capacity and accompanying revenue.

This is not to be construed as advice to circumvent the laws or regulations but simply as a warning as to the possible resulting cost if a major alteration is started without first considering all the angles.

Roof Inspection

If the theatre structure is old, and does not comply with the codes presently existing, it is well for the owner and/or the operator to assure himself that everything is being done to prevent accident and panic.

This is especially true of structures which have wooden trusses for roof supports. Since the roof of a theatre is generally supported entirely on the outer wall construction, either on masonry piers or steel columns, the roof trusses should be inspected regularly by a competent engineer, and his recommendations followed.

Many instances will be found where some parts of these old wooden trusses have failed, especially at their point of bearing on the wall. If leaks have developed in the parapet walls, very often the bearing points of the wooden members making up the trusses will be found to have actually rotted away.

The reason for the structure still standing will not be apparent, according to best engineering principles. If any evidence, such as mold and soft timber, is found, the surrounding masonry should be removed, and a thorough examination made. If the materials show deterioration, proper reinforcing should be started immediately.

Ceiling Inspection

Another source of danger in older theatres is the suspended plaster ceiling in the auditorium, especially if heavy relief plaster decorations are included. Such a ceiling, if very old, will probably be supported on wooden joists and wooden lath. The joists will generally run from truss to truss, with some intermediate hanging supports.

The entire supporting structure of the ceiling should be carefully inspected, with special attention to the plaster keys between the laths, and also to any areas which may have been exposed to water from leaks in the roof. The heavy decorative ornament on the ceiling should have originally been securely tied with wire through the lath. In many cases, this precaution will be found to have been neglected, and the ornament merely "stuck" in place.

On account of its inaccessibility, the auditorium ceiling is difficult to inspect, but a rolling scaffold, a long pole, and a competent inspector will generally suffice to show up any defects. It is also well to know the condition of the ceiling before any alteration or redecoration is decided upon so that sufficient funds may be included in the budget before, rather than after the job is started.

Wiring Inspection

For safety, and also for determining the amount to include in the budget, the electric wiring system should be thoroughly inspected.

In many of the older theatres, the old knob-and-tube system with open wiring is still to be found. Such installations should be entirely replaced by a modern system of conduit and insulated wire in accordance with the requirements of the National Electric Code and local codes.

In the inspection of most any theatre ready for a major alteration, the wiring system will be found to violate almost every safety measure—with overloaded circuits, wires without proper insulation, and metal raceways. These conditions constitute a definite fire hazard, and can, at any time, be the cause of a serious fire. Even without the loss of life, fire may still be the cause of closing the theatre for many weeks, with resulting financial loss.

Heating Plant

Another item that should be carefully inspected before the budget for alteration is completed is the heating system, which may require a new boiler, modern efficient radiation, and new supply and return lines.

Special attention should be paid to the return lines, even if the balance of the system appears to be in good working condition. It will be found that in most theatres, the boiler room is either underneath the stage portion or under the lobby end of the building. In many cases the original builders, in order to save expense, installed the steam returns underneath the auditorium floor, not in trenches or accessible spaces, but simply in the soil. This piping, if it has not already been replaced, will certainly require it, and provision for future accessibility should be made.

Balcony Check

If the theatre has a balcony of considerable size, the structural members should be investigated for safety. Also any new requirements in the code relative to additional stairways or fire escapes should be looked into.

Contingency Money

These different points are being brought out at the beginning because it is most important to have a full and complete knowledge of the condition of your theatre. You must be able to estimate closely the costs which may accrue for items which may not be contemplated in the preliminary estimates. In any event, it is always good policy to include a contingency item in the alteration budget to cover the cost of work which will be found necessary in remodeling an old building.

Time Element

After the extent of the remodeling and alterations have been determined, it will then be necessary to decide upon the proper method of procedure in order that the time, if any, required for closing down the house may be reduced to the minimum.

Considering a major alteration, which might include new signs and front, new toilets, new seating, a complete decoration job, and, perhaps, some changes in the auditorium, such as a new concrete floor, and new proscenium treatment, those items which must be manufactured, such as signs, boxoffice, doors, display frames, seats, etc., should be ordered, and definite delivery dates scheduled.

Assembling this information will enable your contractor to schedule the work which must be completed on the premises in order to be prepared for the installation of the items referred to. Such work should be started just far enough in advance to be completed when the shop work will be delivered ready for installation. If a small amount of time and effort is spent on these schedules, the actual elapsed time which the theatre will have to be torn up, with the resulting inconvenience to the customers will be reduced to the minimum.

Closed For 10 Days

Some of the work can, of course, proceed without closing down the theatre. Most major alterations as described above, if properly scheduled, and the schedule followed, should require the theatre to be closed down for not more than 10 days or two weeks. This, of course, may involve overtime, which, in many jobs of this nature is unavoidable. It is money well spent, though, since daily receipts will be curtailed to a lesser degree.

Should the remodeling, or, in this case, refurnishing, include very little actual construction work, but consist mainly of redecorating, new carpets, seats, etc., this work can be scheduled so as not to interfere with the regular operation of the theatre.

For redecorating the auditorium, rolling scaffolding is available. The scaffolding may be rolled to one side during show time. Seats may be replaced in sections between closing time one night and opening time the next day.

All this requires careful planning and cooperation between the different trades affected and the management. It is well to employ, if possible, contractors who make a specialty of, and have had experience in, theatrical work. They will understand that the sooner the theatre can be reopened, the more satisfied the owner will be.

In this connection, it has been found by theatre operators who have had considerable experience in remodeling and altering their theatres that it is good advertising and a boon to their business to close down the theatre for a few days, and reopen with ballyhoo and an advertising campaign.

2. THE THEATRE FRONT

The spearhead of any remodeling job is the theatre front. If the remodeling budget is small—as often happens—it will be good judgment naturally to spend money where it will do the most good. In most instances, this will be at the theatre front, with new or remodeled signs, boxoffice, entrance doors, etc. An attractive front will help draw trade regardless of the feature attraction.

Boxoffice

Some of the older theatres present fronts which appear cluttered and uninviting to the public. This condition is most apparent where the lobby is narrow, and a center or island boxoffice is used, dividing the entrance in half.

This condition may be greatly improved by moving the boxoffice location to either side of the entrance. It results in one opening with better appearance,





THE TOWER, St. Louis, Missouri, represents a good example of what can be accomplished through the complete remodeling of an antiquated theatre. Long past its prime, the old Florissant owned by St. Louis Amusement Company had only location and seating capacity remaining. Architect Leo F. Abrams designed and supervised a major overhauling that has now given it a new life for many years to come. The main entrance was moved to the more advantageous corner. The entire front was torn out and rebuilt along modern simple lines. Buff terra cotta and stucco were combined to good effect and a modern changeable letter marquee, added to name signs of neon, complete a front that is forceful and patron inviting. By contrasting these two views, the manner in which the auditorium box was retained can be easily noted.



DURWOOD THEATRE, Inc., converted the old Liberty, Kansas City, Missouri, into the new Roxy and thereby gave Kansas City a new first-run. Of tremendous value in such remodeling programs, is a well designed modern marquee with adequate space for proper show selling; and an under-marquee area that is bright and fresh, heralding to the public an inviting interior.

better handling of the public, and, in many instances, better access to the boxoffice from the interior of the theatre. It will often be found possible to increase the net entrance width with an arrangement of this kind, which places the greater area of the boxoffice in unused space at the side rather than in the more valuable space in the center of the entrance.

The boxoffice, just as prominent in this location, should face the direction from which most traffic is expected. Very often, the manager's office can be re-located directly behind or adjacent to the boxoffice, thereby giving better control, and making it possible to transfer cash from the boxoffice without passing through public spaces. Such an arrangement is especially recommended for smaller theatres, where personnel is small, and the manager is required to attend personally to these details.

Ticket Machines

The lay-out of the boxoffice should be carefully studied in connection with the type of theatre it serves. If the theatre has a mezzanine or balcony, or both, the price policy may call for variously-priced tickets, and provision should be made for a wider ticket machine. These machines are available in different widths, depending on the number of variously-priced tickets which they dispense at one time. The minimum width allowed for should be a three-unit machine. This should be increased according to requirements, which may call for five or six-unit machines.

If possible, the type of machine should be ascertained, and then the deal plate and ticket counter designed accordingly. For one of the most popular machines, the widths of the counterplates are: one, two, and three unit standard—12 inches; four and five unit standard—18 inches, and six unit standard—21 inches.

The ticket counter and the deal plate, whether it be marble, wood, or metal, will have to be rabbeted the thickness of the counterplate of the ticket machine (3/32") in order to keep the adjoining surface flush, so that the tickets, when ejected from the machine, will slide, without interference, to the customer.

Support for the ticket machine must either be provided from the floor of the boxoffice or from the front wall. Also, clearance must be provided for the operating motor, which projects from the side of the cabinet enclosing the mechanism. An electric outlet must be provided in the proper location for the motor connection.

In addition to the space required for the ticket machine, more space should be provided for a change machine and the attached chute and change receptacle. This last should project beyond the front window of the boxoffice. It will be found that the opening in the window for ticket-vending and change-return should be approximately 18 inches wide and 4 inches high, depending upon the equipment used.

Window Shutters

For use in colder climates, and also for closing the boxoffice at night, an easy, quick-operating closure will need to be provided for this opening. Standard equipment for the openings may be obtained from theatre supply organizations, or may be specially designed. Some shutters slide both ways from the center, and some slide up, but the simplest and most satisfactory type will be found to be one which may be moved by hand, and which may be secured at night by simple catches on the inside of the boxoffice.

It is good policy to have as much glass as possible on the front and sides of the boxoffice. Therefore, the interior must be nicely finished, and fitted with drapes which may be entirely closed. The Austrian type of drape, which may be raised in folds forming a neat valance at the top, will be found to be the most practical in the majority of installations.

Just above the counter, for a 12-inch space, the glass should be etched in a design to more or less shield from sight coins and currency on the counter.

The deal plate, which should be a few inches wider than the ticket machine counterplate, must project beyond the face of the front glass in order to receive the change receptacle. A small shelf or bag rest about 14 inches below the change shelf, projecting from the front of the booth, is a handy appurtenance. It will be appreciated by the ladies.

The most satisfactory material to use for the deal plate is a good grade of Belgian black marble. Stainless steel or other metal is sometimes used, but due to scratching, denting, and discoloration of both metal and wood, their drawbacks are evident.

Exterior Conformity

The material for the exterior of the boxoffice may be marble, granite, aluminum, stainless steel, wood, brick, or glass block, depending on the design of the balance of the entrance, with which it should blend and conform. In certain instances, the space below the counter can be used as a display frame if proper protection is made to prevent the glass from breaking.

The minimum size for a boxoffice to accommodate one cashier is four feet wide by five feet long. It is sometimes necessary to increase the width to accommodate an extra cashier on busy days. The additional cashier's window may sometimes be located on one side of the boxoffice, when restricted entrance width is a problem.

The height of the boxoffice deal plate should be three feet, six inches above the level of the sidewalk. This is for the convenience of the patron rather than of the cashier. Adjustable cashiers' chairs are available to place the cashier at the proper level inside the boxoffice.

In addition to the opening for change and tickets, there must also be provided, five feet above the outside sidewalk level, a speak-hole in the front glass of the boxoffice. This speak-hole should be four inches in diameter, and provided with a closure, either of special design or of standard manufacture, as retailed by theatre supply houses.

Air Circulation

Provision in the interior of the boxoffice must be made for some storage space, telephones, push button to manager, heating, and, if available, summer cooling. In any event, an adjustable grille should be fitted into the door of the boxoffice and another in the ceiling to provide air circulation.

Lighting outlets and price signs should also be included. An extra duplex receptacle will many times be found useful. A cash drawer within easy reach of the cashier, with the proper number and size of compartments, is necessary.

In certain locations, it is well to consider the installation of a floorsafe for the deposit of coin as fast as it is received. Cash may be deposited through a slot in the safe. The safe, unlocked only by the manager or another authorized person, is a safeguard against boxoffice holdups, frequent in some localities.

Display Frames

In designing the new front, the boxoffice, display frames, and front entrance doors should be studied together to make a pleasing whole. If the entrance is narrow and may not be widened in the remodeling process, then a great deal of thought and planning should be given to the construction and the location of the standard size display frames.

For a medium sized theatre, no more than four outside frames are required to accommodate the standard 40 inches by 60 inches poster. These may be a pair of corner frames, with one double frame on the corner at either side of the entrance, or a single frame on either of the entrances facing the street, plus two single frames on either side of the vestibule between the building line and the front entrance doors.

Depending of course on the design of the front, the exterior frames can be combined with smaller frames on the return pilasters or in the same plane. The smaller frames should take 10" x 12" photos or 12" x 15" stills. If the entrance is particularly narrow, frames on the returns are not recommended. They serve only to cut down the width of the entrance. In such a case, curved frames, each holding one 40 inch by 60 inch poster, set diagonally at the corners, may be a solution.

Exterior frames, set under the marquee, do not necessarily require individual lighting, as the marquee soffit lights will generally be sufficient. A special circuit may be provided with outlets in the soffit to accommodate reflector type spot or flood lamps to light the displays with more light than provided by the marquee lighting, if thought advisable.

Special Problems

Each theatre will have certain problems and requirements as far as exterior display advertising is concerned. These should be discussed with the manager of the theatre or department head in charge of such displays, and provisions made to take care of the special requirements. In this connection, it is not always good planning to provide a lot of display space which must be kept filled at all times if the front is to

present the proper appearance. The cost of service on posters, stills and photos, or individual art work to fill display spaces is an important item in the weekly expense budget, and the space provided for displays should be guided by the size of this budget.

Entrance Doors

In most cases of remodeling, it will be found expedient to replace, and perhaps relocate the front entrance doors. They should, in all but rare cases, have as large glass panels as possible, or even may be all-glass of the tempered type, in order to permit a view of the lobby from the street.

In some of the smaller theatres, where no lobby is possible, and the seats are close to the front entrance, the doors will necessarily need to be solid-panel type. This situation is not good, and should be changed, if possible, to make room for a lobby or, at least, another set of doors between the last row of seats and the outside.

Entrance doors should be equipped with easily-operated hardware, including outside pulls on one set of doors only. This pair of doors should be at the ticket-taker's station, immediately adjacent to the boxoffice. The remainder should be equipped with inside push bars or plates so that they can be opened only from the inside.

This arrangement will be found necessary in most cases, and, in all cases, will aid in the control of incoming-outgoing patrons on busy days. In addition to the push and pulls, the entrance doors will need to be equipped with butts, top and bottom locking bolts, door closers, locks, and hold-open devices.

Depending on the design of the entrance, the space above the doors may be used simply as a glass transom, with fixed sash or utilized to good advantage for a double-faced display frame, with provisions for copy on both the outside and inside faces.

Vestibule Floor

The floor of the entrance vestibule should be colorful and, if possible, indicate in design the flow of traffic. Materials can be colored cement, terrazzo, marble, rubber mats, or a combination of two or more of these.

In any event, the floor should be non-slip, and should have only sufficient pitch to the sidewalk to drain. If a large exterior vestibule is planned, some attention should be directed to the use of rubber mats, which are very effective both decoratively and in removing mud and dirt from the shoes of patrons. But they do require daily removal and cleaning. They should be divided into sections of not more than four feet by five feet for convenient handling. In the smaller theatre, they should be used sparingly on account of the labor required to keep them clean and in the proper condition.

Electric Signs

If entirely new signs are contemplated, the article "Basic Factors of Design and Construction," in the 1947-1948 edition of THEATRE CATALOG should be studied, since the information it contains applies to remodeling as well as to new



THE ESQUIRE, Fresno, California, was an old concrete theatre until aggressive and canny Bob Lippert decided to revivify it. At a cost of $72,000.00, designer Gus Santocono developed an 1142 seat modern theatre complete with Gulistan carpets, Heywood-Wakefield chairs, Motiograph projectors and sound, and Wagner sign letters. B. F. Shearer Company, through H. I. Tegtmeier, supplied the equipment.



construction. However, it will be possible to remodel the existing marquee, in many cases, by the installation of new lighting, new glass panels, and changeable letters.

With the application of a few coats of paint, neon or stud-lighting borders, a very satisfactory result can generally be obtained. If the paint on the old sign is peeling or in bad condition, it should be entirely removed, by use of blow torches, down to the bare metal. A ground coat of paint should then be applied, followed by two coats of special outside enamel. Finish durability can be greatly enhanced by cleaning the metal surface with a phosphoric acid cleaner, prior to painting.

Sometimes the addition of a name sign along the top of the attraction signs will make a pleasant change in the appearance of things and allow the removal of an upright sign which has outlived its usefulness.

3. THE LOBBY

A theatre is judged by the lobby it keeps. As the first and best lighted interior space, it draws the maximum attention from patrons and for this reason all remodeling projects should include some work in the lobby area—if merely a paint and clean-up job. Slightly more extensive undertakings might include one or all of the following changes: new lighted interior display frames, new floor covering, new wall and ceiling treatment, and up-to-the-minute lighting. This last is a most important requisite for the theatre lobby.

Lobby Ceilings

Should a major rearrangement be desired, the putting in of a new ceiling—of plaster composition—or of fabrics or mirrors, or a combination of all of these will be found to produce an arresting and most pleasing effect. This should be carried out, of course, only if the shape and extent of the lobby or lobbies serve the particular requirements of the house in question. If not, more drastic physical changes are called for.

But in most instances, installation of a new ceiling, fabrics and mirrors will suffice. Especially is this true should the present motif comprise heavy plaster decoration, a thing that most definitely dates the older houses. Often, heavy plaster is not only in bad taste—since the original installation—but in a bad state of repair as well, due to a leaking roof and other causes too numerous to mention.

On the other hand, it would be cheaper to leave the ornament right where it is. That is, if it is not too heavy or "busy," and in fair repair, and more or less in scale and keeping with the lobby's proposed new look. Then it might be painted over in one color only. Thus details, which could only be brought out by the use of different colors, would be played down.

Lobby Walls

The walls of the lobby may be either painted, or covered with fabric, or a wide variety of hard surface materials. The latter, though expensive, are more easily cleaned and show fewer signs of wear than paint and fabric. The hard surfaces are composed of glass (mirrors, etc.), plastic-protected wood veneer panels, leatherette, linoleum, and many another patented and special product. These are especially colorful, readily applied, and have the wearing qualities that are necessary for the lobby.

If the lobby is small, it will be found that well-placed mirrors on opposing walls will tend to expand the appearance of the place. Care, however, must be taken in setting mirrors opposite to each other, in order that reflections should be true. Before mirrors are set in the walls, the local codes should be looked into, as some do not permit the use of mirrors in passages designed for emergency exits.

New interior display frames — designed to match frames which may have been set up outside in conjunction with a remodeled entrance—will add decidedly to the decorative effect of the lobby. They also might well supply some of the lighting for this space. Although glass is not absolutely required as a covering for interior display frames, it often is advisable to put it in so as to stop mutilation of the displays themselves.

One of the most notable changes that can be brought about in this area is a change in the lighting scheme. This may be accomplished through the use of exposed or recessed fixtures, or by the use of cold cathode, fluorescent, or incandescent lighting sources concealed in ceiling coves. The extent of the budget is the only limitation on changes which may be made in this manner.

Lobby Floors

Bright new carpeting, with an interesting design, will go a long way toward producing the desired new look in the lobby. The rug in itself will give the patron that feeling of discreet opulence so hard to come by for the same amount of money by other means.

In the event a carpet with a large prominent design is chosen, it will be found that the overall effect may be enhanced by the inclusion of plain carpeting around the walls and down the center of the lobby, where the holdout posts are set up.

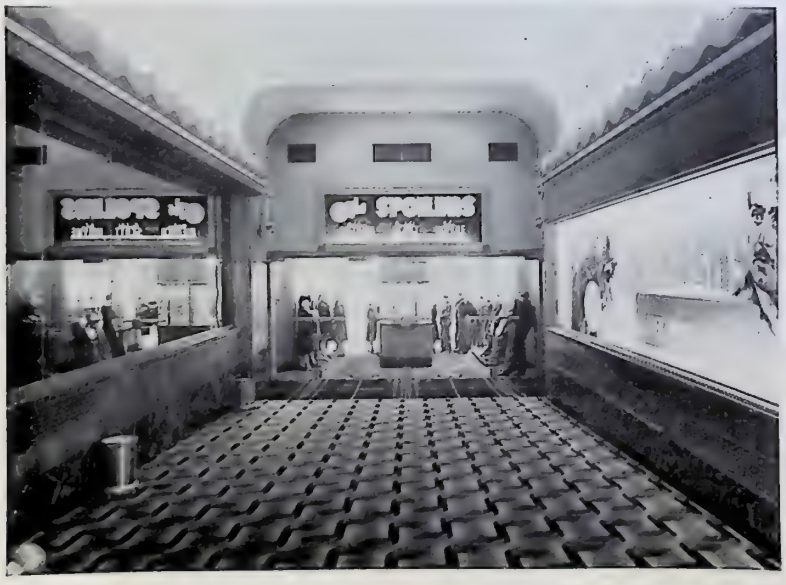
During the course of remodeling the lobby, it is feasible to relocate the duplex base receptacles for the holdout posts or to install as needed ceiling outlets for baby spots, and at the doorman's station a floor outlet for a new-type ticket chopper. Particular attention should be paid to the location of the holdout posts and rails necessary to properly control crowds. This should be discussed with the theatre manager, who will undoubtedly have his own idea how some special problem of his should be solved.

As a matter of fact, it is always wise for the designer to talk things over at length with the manager in order to get his ideas on the program as a whole and on any special requirements. He, after all, is the person most interested in having a theatre that will meet with the approval of its clientele, since patrons bring complaints and suggestions directly to him.

Air Cooling

For conditioning the atmosphere of the lobby, a separate unit-type conditioner will many times be found to be the most practical. Inasmuch as the loads here vary greatly and never re-

LOBBY OF THE J. P. HARRIS, Pittsburgh, Pennsylvania, is a classic example of what may be done to improve the appearance of the lobbies of older houses. Here are provided a clear view from the street; a show case, which contributes to the well-lighted aspect of the lobby; mirrors, which give an illusion of spaciousness; and a rug for opulence. Note the island position of the boxoffice.



quire as accurate regulation as the auditorium, it is good engineering to put the lobby portion of the house on a separate air-cooling zone.

Upon investigation it will very frequently be discovered that air-conditioning gear in the lobby, if any, is undersize or does not do the job for which it is intended. The economical answer to this is the unit air-conditioner, which may be had in one and one-half tons to seven tons capacities. The equipment will show a great saving in duct work. In many instances, it may be put into the lobby without ducts of any kind.

It is not necessary to concern one's self unduly with the relative humidity and dry-bulb temperature of the lobby, since patrons do not remain here for long, except during holdouts. In this last event, they will be standing. A dry-bulb temperature of from 12 to 15 degrees will be quite satisfactory. Persons standing or moving about are not as susceptible to drafts and temperature differences as those who are seated.

The Perforated Mat

If carpeting is used for floor covering, space must be reserved for at least four feet of rubber matting or asphalt or rubber tile immediately inside the entrance doors. This will help to remove some of the dirt and water from the shoes of patrons before they walk onto the carpeted area.

The perforated rubber mat does this job as well or better than any other type of mat. It is more expensive, though, insofar as daily upkeep goes. Rubber mats should be laid in sections small enough to be handled easily, no larger than four-by-five feet. These sections should be separated by metal strips set flush with the tops of the mats and against the concrete floor. Thickness should be from three-eighths to one-half of an inch. Also, it is well to remember that entrance floor material must be laid flush with the top of the adjoining carpet.

Storage Space

The more extensive lobby remodeling job should include provisions for a storage space for sign letters and for rubber runner mats, used to protect carpeting during bad weather. Generally, with a little foresight, such a space may be blocked out in the vicinity of the front entrance. The cost of setting it up will pay for itself many times over in labor and maintenance savings.

Summing up for the lobby, the alteration should furnish a well-lighted, attractively-decorated interior that may be seen from the street through entrance doors. It should provide for the control of crowds and for their comfort while standing in line or passing through to the street or to the auditorium.

4. REST ROOMS

Adequate Facilities a "Must"

The most characteristic privation of the older facilities is cramped space, this in face of the fact that building codes now set minimum requirements for toilet fixtures. It is advisable, incidentally, to go beyond the law, and to add one extra water closet to the ladies' room and one extra urinal to the men's.

Oddly enough, one of the most significant changes in theatre business outlook in recent years has been shown in regard to the set-up of toilets and retiring rooms—a factor vitally important to box office success. In old-time houses, these special facilities were put in, more or less, on the construction set principle, wherever they happened to fit into the final pattern.

Sometimes they were located in the cellar; sometimes in a corner. That is why the ingenuity of remodelers is taxed today. The problem is how to bring these tucked-away facilities up to modern standards of aesthetics and of sanitation. The public, especially the feminine contingent, wants superlatively comfortable, meticulously-kept rest rooms.

At least two lavatories should be put in each toilet. These would be increased in accordance with the theatre's seating capacity. Division stalls may be of marble, slate, or metal, finished in either porcelain enamel or baked-on-enamel. In order to prevent denting by mops and rusting, a stainless steel channel should be secured to the bottom edges of metal stalls.

Ceramic Tile

Floors and walls, of course, should be covered with an impervious material. For this, no better material has ever been discovered than ceramic tile, with the glazed-finish type for walls and the unglazed for floors.

Owing perhaps to price, limitation of wall tile to wainscot or toilet stall height has been a time-honored custom. This is impractical on grounds that maintenance of plaster surfaces is in the long run more costly than the installation of tile from floor to ceiling, and, further, in the ceiling itself. Plaster surfaces demand constant scrubbing and painting. Tile is more sanitary.

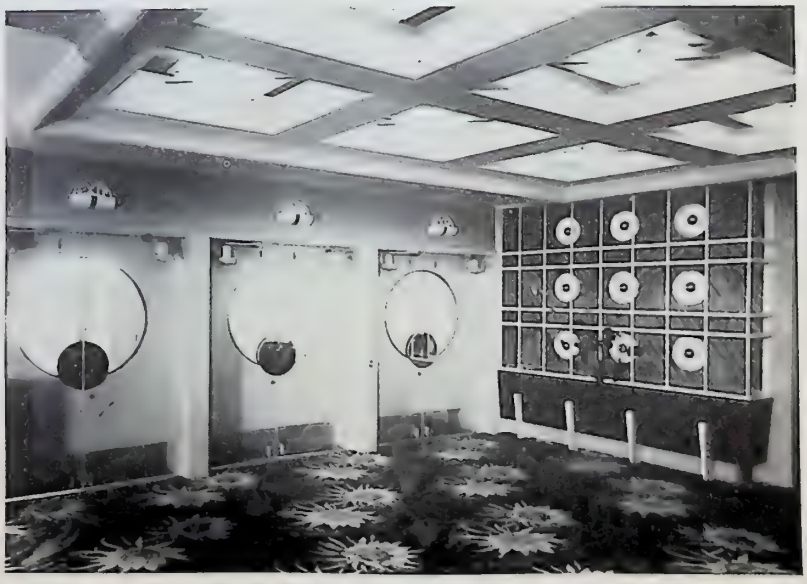
A new type of adhesive enables new tile to be laid on old. By employing a bullnose at the top of an existing wainscot, the tile may be continued to the ceiling.

Provided water pressure is adequate, flush valve water closets are recommended over tank types. Seats should be of the coverless, open-front types. If the budget will stand it, the wall-hung water closet is best for the reason that it is more easily cleaned. This fixture, in conjunction with a hanging toilet stall, gives an unimpeded floor space for mopping.

Opinions differ in regard to the type of urinal which should be put in. Some operators prefer the wall-hung type, and others the floor type. The argument is useless, as both types call for constant sanitary upkeep in order not to become offensive. If the floor type is used, the floor should be sloped slightly toward the urinal. This would obviate the need for a floor drain. In all cases, a floor drain should be provided in the ladies' toilet.

Lavatories with integral compartments for liquid soap are now available, and are recommended. Or a lavatory may be ordered with a cut-out section for the insertion of a metal or glass container of liquid soap. In either case, they are equipped with a plunger atop the lavatory for dispensing soap. Lavatories should be equipped with self-closing faucets to prevent flooding due to stoppages and water waste.

LOBBY OF THE PISMO, Pismo, California, is smart and modern. This 750 seat theatre owned by Hardy and Chamberlin was entrusted to Architect Vincent G. Raney who accomplished some unusual results. Lighting and the use of modern materials play a large part in the decorative scheme carried out in greens and browns. The carpet is a Karagheusian Wilton known as "Nightblooming Cerius."





THE MODERN TOILET ROOM should reflect the ultimate in luxury rather than the minimum in accommodations. Tile to the ceiling, tile or terrazzo floors and modern colored fixtures in the Community, Hudson, New York, provide a patron-pleasing elegance. Ladies' lounge in Skouras Theatres newly remodeled State, Jersey City, New Jersey, carries out the modern trend with exceptional patron facilities.



Floods Will Occur

If the toilet rooms are situated over a finished interior of any kind, membrane waterproofing is mandatory. It must be installed under the fill for the entire area of the tile floor, and turned up in the walls for at least 12 inches. Sooner or later, a flood is sure to occur in the rooms. Membrane waterproofing will pay for itself many times over during an experience of this kind.

A new electric hand dryer, more efficient apparently than the older one, is being installed in better-class houses. The old dryer, following its installation, oftentimes was promptly taken out. The dryer, of course, does away with expensive, mussy paper towels. Provisions should be made during rest room alterations for electric outlets to service this equipment. Either the wall type or a pedestal type, for the central area of the toilet room, may be had.

Importance of Lighting

A well-lighted toilet room will do more to gain the favor of the clientele and to keep these areas clean and sanitary than any other means that might be adopted, not excluding an attendant on constant duty.

The area outside the stalls should be lit with an intensity of at least 35 footcandles at the floor. Probably the most efficient types of lighting to this end are flush fluorescent troffers, with the two-tube kind outside and the three or four-tube models over the stalls.

That the stalls themselves should be brilliantly lighted is not merely theoretical. It is being proved in practice. Wherever this theory is at work, the difference in the tidiness of the stalls is truly remarkable. It not only causes porters to clean more thoroughly, but, more important, affects the condition in which the stalls are left by patrons.

For Privacy's Sake

For privacy, and to preclude disturbances, it is imperative, naturally, to provide some sort of ante-room or vestibule for men's and ladies' toilets. Entrances should be separated or shielded from one another.

If the rooms adjoin each other, separation of the entrances, after a little consideration of the plan, is not difficult. Adjoining rooms, incidentally, result in the least expensive piping layout. In the average non-metropolitan community, there is no particular advantage to be gained by setting up a large smoking and retiring room with the men's toilet. In fact, more often than not, such an accommodation is abused and an unnecessary expense. Our recommendation is that a well-lighted, medium-size vestibule be provided. The floors and walls of this room should be of tile. With the exception of sand urns, the place should be without furniture.

For the ladies, however, it is a different story. Here a room of comfortable proportions, with dressing tables or shelves, mirrors, chairs, and tables, is virtually a necessity. The wall covering of this room, note well, will be subjected to the worst abuse of any throughout the theatre.

A material from which lipstick and other marks may be readily effaced must be chosen. On the market are many

such products. They employ plastic finishes to simulate fabrics, wood, and marble. These should be carefully looked into for absorption qualities and for resistance to fire and cigarette burns.

Disappearing Objects

Ash trays and art objects, in short, all decorative pieces must be bolted securely to their resting places, or they will disappear quickly. Even table lamps have got to be bolted down or out they will go. Without these precautions, the decorations remain an insurance hazard.

Ventilation

First, it is recommended that windows, always an annoyance, be done away with, and the openings be filled with masonry.

Following this, a mechanical ventilation system should be installed that will change the air in the area once every two minutes, at least. The only exception to mechanical ventilation would be the insertion of grilles in the doors between the theatre proper and the toilet space. Exhaust fans might draw through these grilles conditioned air from the theatre, and thus provide air-cooled conditions in the toilet rooms at all times.

Since it is necessary to exhaust some air from the theatre while fresh air is being drawn into the house, the grille arrangement would not impose a heavier-than-normal load on the air-conditioning equipment.

5. THE AUDITORIUM

The theatreman will have to yield more points to the designer in the auditorium than anywhere else. For reasons that are obvious, auditorium rehabilitation will involve the heaviest expenditure and the most drastic changes.

Rickety chairs will bow to superlatively comfortable modern chairs; ancient floors to new floors; 29-inch row spaces to 34-inch spaces (with the loss of a possible 100 seats); music-hall boxes to no boxes at all; busily ornamented walls to suave, acoustically-treated ones, and so forth. The designer might even find it nice to round out the job with a new ceiling.

Professional remodelers invariably bracket auditorium overhaul with new seating and sight lines in the firm conviction that these twin factors of theatre comfort "will without any doubt produce the greatest return on the investment of any single improvement that might be made in a theatre remodeling job."

Here then is an exhaustive analysis of all the things that can be done to make the heart of the house a better place in which to relax. It's up to the individual theatreman to decide how much he can incorporate for the figure that he has in mind.



IN ANOTHER VIEW of Skouras Theatres newly remodeled State, Jersey City, New Jersey, can be noted the manner in which modern fabrics can be used to conceal heavy pilasters and outmoded plaster ornamentation without structural changes. At Bob Lippert's Esquire, Fresno, California, some of the plaster ornamentation was retained, and actually played up with effect through modern lighting.



Installing New Seats

If new seating is to be put in, the floors will probably have to be renewed. It will make no difference whether they are wood or concrete. Old concrete floors will be found to have been drilled for new seat bolts on former occasions and, consequently, to be spalled and cracked. Very often they were improperly constructed in the first place.

In old theatres, too, it will be found that seat rows are spaced altogether too closely for comfort. Where new upholstered seat backs are put in, additional space between rows is mandatory. This will result in the sacrificing of some seats. On the orchestra level, under no circumstances should seat rows be set up that are iess than 32 inches back to back, and in the mezzanine or balcony less than 33 inches.

Many conscientious operators, finding that it pays, today insist on seats being installed at not less than 34 or 36 inches between rows, even though it means the loss of as many as 100 seats in the overall count. This, naturally, is a matter which should receive very serious consideration. Management must decide just how far it wants to go in providing the ultimate in comfort for patrons.

Especially where the theatre was originally designed with a full stage, it will be found advisable, and not too costly, to extend the seating area forward. Thus by cutting back the stage and leaving only the required area for speakers, screen and small stage setting, a minimum requirement of 22 feet from the first row of seats to the back stage wall may be gained.

Ideal Sight Lines

However, should this change be made, it will probably be necessary to replace most of the orchestra floor in order to create ideal sight lines because of the new screen location. This situation, necessitating intelligent study, will in most instances result in the development of a reverse curve for the orchestra floor. The proper construction of such a floor is outlined in "Basic Factors of Design and Construction," THEATRE CATALOG, 1947-1948.

In old-time houses, steps at front exits are prevalent. During floor remodeling, with proper study, these dangerous exits may often be improved upon.

A new floor installation will oftentimes open up an opportunity to get rid of old heating pipes buried beneath the floor. More than likely, they will be found to be in a state of deterioration, because they were laid down without protection. Should it be found necessary to replace the pipes in approximately the same position, a trench large enough for ready access should be dug to hold them. The trench might well be used, too, for the recirculation of air required by the air conditioning system.

Also, a new floor installation provides a chance to lay conduit and wire for aisle lights to the location of the seat ends. Aisle lights should be put in with any new seating layout.

Standees

In designing a seating layout, space for standees should be provided if possible, behind the last row of seats. The space should be separated from the last row by an attractive, substantial standee rail. This might result in the sacrificing of some seats, but most theatremen have found that such an arrangement produces more ticket sales than if the space were occupied by permanent seating. Especially is this so at theatres where the heaviest attendance occurs on weekends, with more customers during that period than can be immediately accommodated with seats.

Since the auditorium front or proscenium is the most conspicuous, this area is the next most important consideration of a remodeling undertaking. Many old-fashioned houses are setup with proscenium boxes, which, of course, are valueless in a movie house, except as dirt catchers. Their removal will give the designer a chance to change the entire appearance of the proscenium. This might be accomplished with plaster and decorative painting, and again by covering the area with drapes which tie in with the stage setting.

In this connection, without undue strain on the budget, it is always possible to enlarge or otherwise alter the proscenium opening, either by actual reconstruction or by the tasteful use of decorations and draperies.

Acoustical Treatment

Next we come to the side walls, which, in all probability, will have to be treated acoustically. Should these walls require no structural changes, their plaster ornamentation being in a good state of repair, the smartest thing to do will be to develop an appealing scheme of painted decoration. The old colors might be discarded and some of the ornamentation painted out.

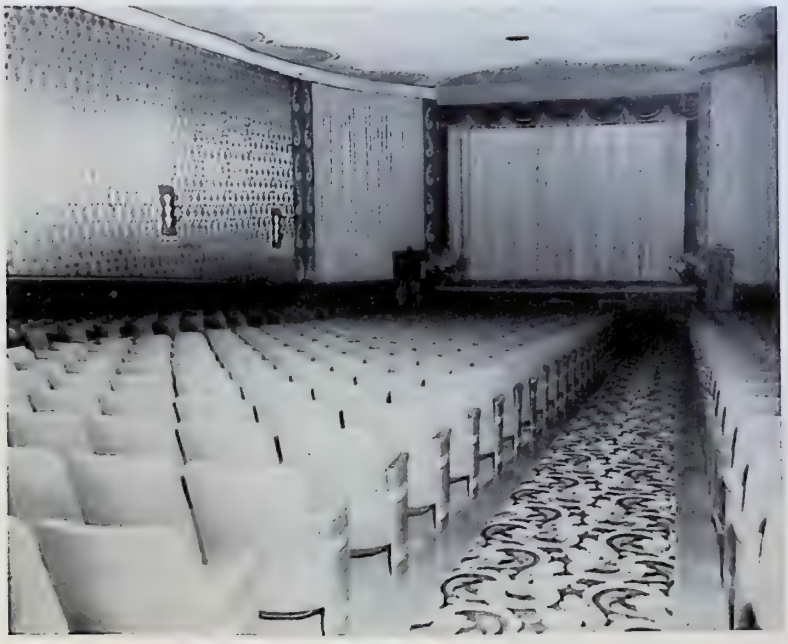
Typical auditorium walls are divided into panels by the masonry or steel supports for the roof, with some plaster or wood mouldings forming borders. These mouldings may be removed, and the entire surface between the pilasters and above the wainscot given an overall treatment of paint. If acoustical treatment is indicated, a fabric might be stretched over that.

At this time, there is much objection to the use of fabric on auditorium side walls for the reason that laws require it to be flameproofed at least once a year. If this operation is not carried out carefully, the results are spotty. Especially is this true wherever the fabric is not thoroughly cleaned before spraying.

Another legitimate objection to fabric panels is the fact that they are difficult to keep clean, an expense to keep up. To the present time, however, no really satisfactory substitute for fabric has been found, since to make the acoustical treatment effective such material must be porous and at the same time decorative. There are, of course, now on the market acoustical boards and tiles of metal, pierced to allow the penetration of sound waves. But their effect is hardly theatrical, nor is their installation particularly adaptable to the situation.

Acoustical plaster, and also other products which can be blown on the walls are available, and will take care of the acoustical problem satisfactorily, but do not take care, very satisfactorily, of the decorative or maintenance problems. The fact remains that any acoustical treatment is conducive to dirt absorption and will become less and less effective as the pores fill with dirt.

GOOD ACOUSTIC RESULTS are obtained through the use of decorative fabrics applied over rock wool on the sidewalls. Upholstered seats are also helpful. Here illustrated is the auditorium of the Lane Theatre, Williamsburg, Kentucky, where Falls City Theatre Equipment Co., installed 620 Ideal Seating Company "Chief" model chairs. The seats are upholstered in cohyde leatherette, and backs in patterned striped Spanish orange fabric. Both combined with the underpadding prove sound absorbent.



Painting the Walls

If acoustical plaster or similar product is used, careful consideration must be given to the type of paint employed and to its application. Only a paint recommended by the maker of the acoustical treatment should be used, which will most generally be a cold water non-bridging paint. Though some manufacturers claim that their particular product can be painted with ordinary lead and oil paint without affecting the sound absorbing qualities, this does not hold and extreme care should be taken if such products are used.

To break up the monotony of a plain side wall treatment, consider, if you will, the installation of a feature panel, which might be lighted dimly by concealed lights. Also, the wall might be covered with special paint to stand out when a black or infra-red light is thrown on it. These last are available at all theatre supply houses with the necessary fixtures for mounting either above the ceiling or in other concealed locations.

Painted Ceilings

The condition of the ceiling, of its supporting structure, and plaster ornamentation should be investigated by qualified persons, and if found to be in a safe and sound condition, a decorative painting, which will tie in with and accentuate the decorative scheme throughout the auditorium, should be applied.

In many cases, the original ceiling will be found to have a well-designed motif and well-executed plaster ornament, which will need only cleaning followed by freshening with one coat of paint. Oftentimes, the ornamentation may have been originally treated with gold leaf or dutch metal, which might merely need cleaning to bring out its original luster.

Should the ceiling paint be in good condition, showing no signs of peeling because of roof leaks, one coat of paint might well do the trick and serve the purpose as well as two or three coats. Some people have the mistaken notion that it is necessary to apply two or three coats to produce a first-class painting job, but with an auditorium ceiling, which is far removed from the possibility of actual contact or close observation, the desired effect can often be obtained by cleaning and then applying one coat with a second coat where required.

The old plaster, unlike new work, will not need a sealer coat. Nor will plaster require paint as a preservative. Hence the application of more paint than is actually necessary is a waste of money and time.

In order to get by with one coat of paint, however, it will be necessary to thoroughly clean the surfaces to be painted. Some painters prefer to apply the first coat while dusting, painting in what dust will stick and letting the balance fall where it may. Where none of the original work is to be retained, this may prove to be just as satisfactory and certainly less expensive than cleaning thoroughly and using less paint.

6. BALCONIES

In the good old days when people everywhere lined up in long queues to see movies, it was good business practice to cram as many patrons as possible into as small a theatre space as possible.

Some very uncomfortable seating arrangements which no longer are good business, resulted. To this day, in the balconies of ex-vaudeville and other ancient houses are found chairs from which it is impossible to comfortably relax.

For seats in the Himalayas of these theatres a lower admission fee is charged if, indeed, anybody can be induced to pay for them, which is doubtful. The solution to the problem will probably be less costly than the theatreman realizes.

Seats and Slopes

It is a plan dear to modern remodelers—the one calling for the loss of some seats. With sight lines of all seats in focus, row-spacing increased, and steep slopes reduced, it is their theory that every seat in the balcony can be occupied sometime—at orchestra prices.

First, however, the structural supports of the balcony should be inspected for weaknesses and where necessary reinforced or replaced. The stairs, cross-overs, and vomitories probably should be revamped for easy passage. Originally, the balcony undoubtedly was put in with steep slopes in an effort to pack in as many seats as possible.

Very often, without much change in basic construction, it is possible to increase the width of steppings in order to increase row-spacing. If a reduction in the height of the risers is found to be feasible, wide and easy stairs may be installed. With the climb made less an effort, balcony admission prices might be raised to the level of those of the rest of the house.

In the main stairway it is a good plan to use more than one run of stairs, with horizontal passages connecting the different runs. This relieves the total ascent. Further, with ramps put in wherever possible, balcony patrons do not realize nor resent the distance that they have to climb to arrive at their seats.

A loge section, in which can be set up a better seat than in the balance of the house, may be put in a large balcony by the introduction of a cross aisle. The loge, naturally, will command a higher admission price and may be used as a reserved section.

In altering the steppings, and especially with the creation of a cross aisle, more than usual attention must be paid to the sight lines, in order that there should be minimum interference from traffic in the cross aisle. Traffic could block the vision of patrons seated in the first row.

If the balcony is without aisle and step lights, these should be included in the remodeling program. At the same time, electric outlets for exit and directional signs, required to move crowds in an orderly and efficient manner, should be put in.

A WELL PLANNED AND WELL CONSTRUCTED BALCONY can not only increase seating capacity but can be a very advantageous spot from which to enjoy the show. Here at the rebuilt Tower, St. Louis, Missouri, Architect Leo F. Abrams constructed a concrete balcony and concrete roof. As a result, 1500 American Seating Company "Bodiform" model chairs are accommodated with ease. The stepped ceiling and single modern mural set the decorative theme. Note the alternating aisle lights.



Carpets Prescribed

The laying down of carpets in the aisles, cross aisles, and vomitories is an effective practice in that it will add greatly to the appeal of this section. At times when new carpeting is being installed in the lobby, foyers, or other prominent and well-lighted sections, it is often possible to salvage the old carpeting and relay it to the balcony. Here it may give several more years of service.

Aisle carpeting in the balcony is a definite hazard unless steps are designed with a cut back in the risers. Cutbacks or sloping risers not only give a wider tread but also eliminate the possibility that ladies might catch their high heels on vertical risers without nosings.

Incidentally, if not already provided for in the old construction, electric outlets should be installed to light at all times the rear section of the balcony. Very often this section is left without lighting during the running of the picture, which condition is not conducive to good policing.

Dated Lighting

Many old-fashioned theatres have enormous hanging lighting fixtures, which must be lowered by winches for relamping and cleaning. Sometimes these are of crystal, of a composition, or of ornamental iron.

Modern remodelers like to eliminate these huge ornaments in favor of down lights, large side-wall fixtures, or cove lighting (if the plan calls for a new ceiling). Further recommendations are given in "Basic Factors of Design and Construction," THEATRE CATALOG, 1947-1948.

Booth Refitting

If the projection booth, and its equipment, have been neglected, a new layout is an imperative necessity. For the booth, a complete fireproof enclosure should be provided, in which is a toilet for the operators, a rewind room, and a room adjacent to this for the motor generators.

Minimum dimensions of the booth itself should be twelve-feet deep, fourteen-feet long and ten-feet high. If more than two projection machines are to be set up or spotlights, the length of the booth should be increased proportionately. Installed should be porthole shutters, which will close automatically in case of fire in the booth, and a new wiring system for projection and sound. On the walls and ceiling should be absorbing acoustical tile. Two exits from the booth, one on either side, should be arranged.

Keep the Stage?

To keep down maintenance and heating costs, it sometimes will be found worthwhile to tear down the upper part of the stage house, in the event that the theatre originally was provided with a full stage. If the structure is in good repair, with a gridiron which is useable, this procedure is not especially recommended. A future change of policy or conditions might require a full stage for the profitable operation of the theatre.

Should the stage floor be in bad shape, it should be repaired, of course, or a new floor laid down. For the motion picture house a painted concrete floor is adequate. Old wooden floors may be covered with a dark linoleum, or stained a dark color to prevent the reflection of projection beam light.

Radiators a Bother

If in the new scheme, air-conditioning, with indirect heating coils, is installed, the old cast-iron radiators along the side walls of the auditorium can be dispensed with. They may be kept immediately adjacent to exit doors for additional heating purposes. Where old-fashioned radiation is required, the large cast-iron radiators can be replaced by fin-type radiation enclosed in recessed convectors. This would be a marked improvement, not only in appearance but in efficiency.

Shoulder-High Wainscot

A wainscot, of hard-wearing material and about shoulder height, should be put in the walls of the auditorium. A good cement plaster, which can be painted easily, is probably the cheapest material for this purpose. Other materials, such as marble or wood, of course, are for this use very satisfactory and serviceable. In most cases, however, these would be considered an unnecessary expenditure.

Exits a Problem

In an old house the doors and frames of the emergency exit openings in most cases will require replacement. They should be of either hollow metal or kalamein and should carry an underwriter's "C" label.

Although it is difficult to obtain a labeled, flush-type kalamein door, this type will be found to be much better than the panelled type, for the reason that the doors generally are exposed to severe weather conditions. Eventually water will seep behind the mouldings, especially at the bottom rail. If flush-type labelled doors are not available, then a fourteen-gauge sheet-metal panel should be applied to the outside surface of the doors.

Exit doors must be weather stripped all around. They should be provided with hardware for panic prevention. A flat steel astragal on one leaf, securely bolted through the door stile, will prevent to a large measure the forcing of the door. In some localities this is a common occurrence and a continual annoyance to the theatre manager. There, electrical alarm systems should be set up.

The side exit courts have to be put in a condition that will provide safe passage in an emergency. Involved might be new paving and new drainage. With the installation of a new auditorium floor, it might be possible to adjust the level of the exit court to that of the floor. This would eliminate steps and steep ramps. Any such condition at least could be improved.

Walls and Roof

Before going in for interior rearrangements it is imperative that the outside walls and the roof be put in first-class order. Cracks in masonry have to be filled or caulked to make them watertight. To prevent freezing, outside down-spouts, if any, should be changed to interior leaders.

The roofing should be made tight together with the flashing, and special attention given to the coping on the parapet walls. This last is to be done in order to prevent water from entering the top of the masonry walls. If at this vital point things are in a bad condition, new coping should be provided with copper through-the-wall flashing.

7. THE HEATING PLANT

The heating plant of a theatre which is ready for a major remodeling job will usually require considerable overhauling to be put in condition for economical operation. If a new plant has to be installed, the final choice of type of heater will depend on a number of considerations, some of which are discussed in this section.

Automatic Control

If the boiler is in good mechanical condition, but is hand fired, it would be well to consider the installation of a mechanical firing unit, either a stoker, oil burner, or gas burner. Of the three, the gas burner is, of course, the most convenient but would be economical only in localities where natural gas of the proper B.T.U. rating is available at low rates. The choice of a stoker or oil burner will also be governed by the availability of the fuel and its cost. Whichever type of fuel may be decided upon, automatic controls, actuated by thermostats located in the theatre and also on the exterior should be installed. These will vary the amount of fuel consumed with the variation of the human load inside the theatre and also will anticipate a change in the outside temperature, thereby saving fuel and creating a more comfortable condition in the theatre.

Inspection, Repairs and Additions

If the old boiler is to be re-used it should be checked for cracked sections; if it is the cast iron sectional type, or if it is a steel tubular boiler, the tubes and shell should be inspected. Both types of boilers should be insulated with standard type of boiler covering, and if this is an old job the covering should be renewed and patched where necessary. An automatic high-low water cut off should be added to boilers not already equipped with this regulator. Steam or hot water supply lines, and also the return lines, should be checked for size, pitch, covering and possible low points in the runs which might cause stoppage of circulation and unpleasant noises.

Indirect Heating

The possibility of using indirect heating for the auditorium, replacing direct radiation with this type of system should be investigated at the same time. Such replacement will often be less cost-

ly than replacing the supply and return lines under the floor slab, if these are found to be in bad condition.

If a new air-conditioning system is being installed at the time of the remodeling, this would be taken into consideration in the change, but it might also be indicated if mechanical ventilation is already installed or contemplated. Since an indirect heating system will necessarily depend on a blower for circulation of the heated air, it will be necessary, if such a change is made, to still retain the direct radiation in the front part of the house, including the toilet rooms, and projection booth, and any commercial portion of the building.

Elimination of Radiators

The installation of a booster heating coil and blower to blow heated air across the front entrance doors is recommended in every case. Such a change will permit the discarding of large unsightly cast iron radiators in this location, and will do a much better job of eliminating cold drafts in the lobby and at the rear rows of seats.

As previously mentioned, the replacing of old type cast iron radiation by the new convector or fin type, will be the means of saving space which will be welcomed in many instances, and will also make a definite improvement in the general appearance of the space in which the change is made.

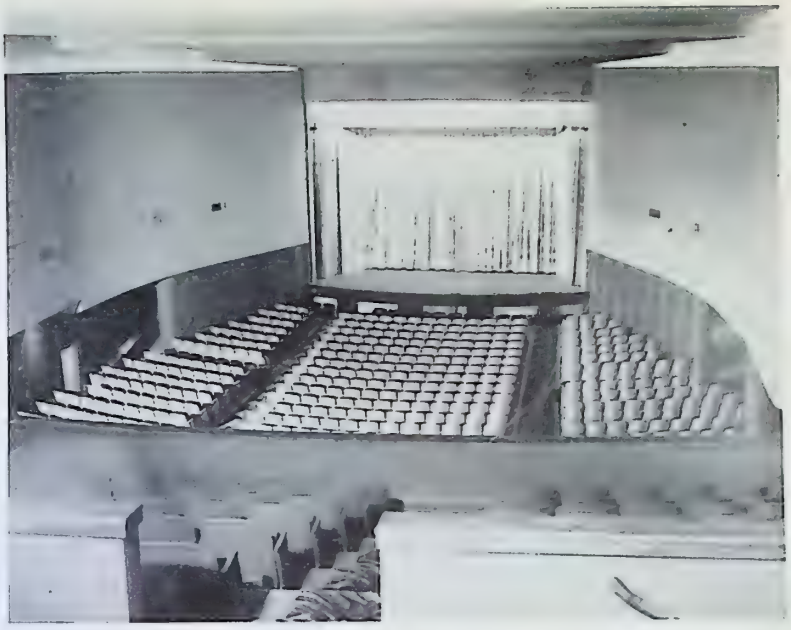
8. AIR CONDITIONING EQUIPMENT

The rules governing correct installation of the air conditioning system have already been discussed at great length in this and previous editions of THEATRE CATALOG. However, because of the complex nature of the equipment and its special requirements, additional data on specific component parts is given here to enable the theatre owner or operator to get the most efficient operation from his system and to bypass mechanical breakdowns.

Ducts

Difficulties may be expected in the installation of the ducts for the air circulation. If trusses have been used in the roof construction, then the problem is greatly simplified, as there will be ample space over the auditorium ceiling to run the larger ducts.

Before the work of installing the ducts over this ceiling is begun, the workmen should be cautioned and impressed with the fact that utmost care must be exercised, so as not to damage the ceiling in any way. They should be required to install temporary plank walk ways to all portions of this space that will be occupied by their work, and the operation should be inspected frequently during the installation, and given a final thorough inspection at the finish, to be sure that no plaster bond has been broken, and that no hanging supports have been cut without proper replacement or reinforcing.

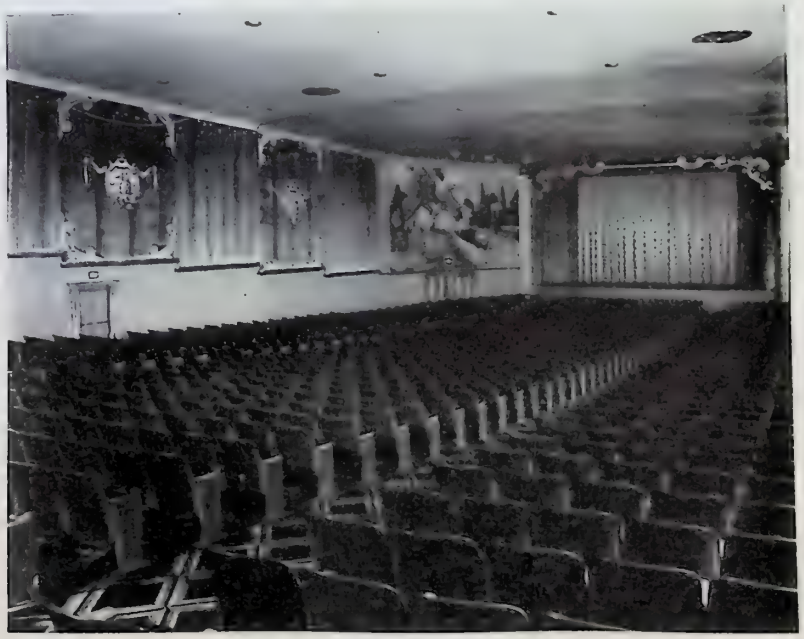


THE DON, Shreveport, Louisiana, presents a well designed auditorium containing 1195 Heywood-Wakefield chairs installed by Delta Theatre Supply Company. Owned by Don George, the architect was Nield Somdal, under whose direction a modern air conditioning system was installed. Of particular interest is the manner in which false walls containing the air and light ducts follow the viewing angle after providing side aisles until the legal limit of seven chairs is reached.

Attention should also be called to the fact, that in some instances the damage will be very hard to detect from above as well as from the orchestra or balcony, and the plaster ceiling, especially if it has heavy ornamentation, may have become a menace, and portions of it may be liable to fall at some future time during a period of prolonged vibration either from sound effects of the picture, or from vibrations caused by heavy trucks, street cars, or many other agents.

Before the contract is given out for this portion of the work, be sure that the contract price includes the necessary

CEILING AIR DIFFUSERS carry a plentiful supply of conditioned air to every seat of the big one-floor 2000 seat Yorktown, Cleveland, Ohio. Designed by George Ebeling, owned by the Vermes Brothers, and decorated by Novelty Scenic Studios, this new theatre offers many new ideas to the prospective remodeler. Black lighted murals at either side of the stage opening, alternating plain and ornamental plush wall fabric panels, and tastefully arranged stage draperies were part of the Novelty scheme.



overtime which will be required if the theatre is to remain open during the progress of the installation. It is possible to allow much of the work required for an air-conditioning system or ventilation system to proceed during show time, but for reasons which are very obvious, the work over the main ceiling should be done only when the public is not subject to injury or panic.

In instances where there is no space in the attic for ducts, then the problem of distributing the air properly in the auditorium becomes more difficult, but not impossible. The large ducts can sometimes be run over the top of the roof, in which case they must be well insulated. In other cases the ducts can be installed to imitate beams through the center and directly under the ceiling, or along the sidewalls.

In the other parts of the house, where the duct sizes are much smaller waste spaces can be found, or the ducts furred in so that they do not detract from the general appearance.

Cleaning Ducts and Plenums

If any or all of the existing sheet metal ductwork is to remain after the remodeling, then arrangements should be made to have the interiors of the ducts thoroughly cleaned of the accumulated dust and dirt. In the larger cities, some contractors specialize in this class of work, and do a very excellent job of cleaning with special vacuum cleaning equipment. To accomplish this, it is necessary to cut holes in the ducts at intervals, and these should of course be closed up air-tight after the job is finished.

While this job is being done the entire duct system should be gone over and all joints and seams which may have opened should be tightly closed, and any hangers which may have become loosened or removed should be repaired. Particular attention should be given at the points where the sheet metal ducts join with plaster or masonry ducts which are sometimes used for vertical risers.

The same cleaning operation together with the closing up of all leaks as required for the ducts should also be carried out for any plenum spaces to which the ducts are connected. The space between the balcony soffit or that of the mezzanine and the construction above is very often used for this purpose, and the duct connections to such spaces, also all the enclosing construction should be made as tight as possible, and of course, should also be cleaned thoroughly. Many times this will mean the difference between the satisfactory and unsatisfactory operation of this portion of the ventilating or conditioning system. After the ducts and plenums have been cleaned and made tight, periodic inspections should be given and necessary steps taken to see that they remain in this condition.

Filters

If dust and dirt are found to gather in the space with undue rapidity, either a new bank of filters should be installed, or the system inspected for leaks, and these, if any are found, closed.

Many ventilation systems will be found where no filters have been provided. If this equipment is installed in an adequate manner the cost of cleaning the interior of the house will be noticeably reduced. The cheapest installation for this purpose employs throw-away filter units made of glass fibers, animal hair, etc., and are very satisfactory if inspected regularly and replaced when required. Automatic self-cleaning equipment which is available at a higher original cost produces far better results.

Insulation of Ducts

While the duct system is being inspected for leaks, etc., evidence of rusting of the metal may also be noticed. This condition will indicate that excessive condensation is taking place because of the difference in temperature of the air in the duct and the temperature of the air in the enclosing space. This condition is often found where the main supply ducts run over the suspended ceiling, and the attic space becomes very hot due to the lack of roof insulation, and proper ventilation of the attic space itself. Gravity ventilators through the roof into this space, with louvers in the exterior walls at each corner, will provide circulation and relieve the condition to a great extent. It may, however, be necessary, in addition, to insulate the ducts themselves, which will not only stop the condensation, but will also take a large load off the air conditioning plant. The louvers referred to above together with the gravity ventilators should be provided with weather-tight closures for the winter season.

If new roofing is to be installed, then it is recommended that the necessary insulation be installed on the roof deck before the new roofing is laid. This will in most cases dispense with the necessity of insulating the ducts themselves, but the gravity ventilation is recommended in either case.

Spraying the Roof

When the water from the condensing unit of the air conditioning system is not recirculated through the system, the installation of the necessary piping and pump to spray this water over the roof area, will produce a certain amount of evaporative cooling and keep the space underneath the roof many degrees cooler, a distinct help to the air-conditioning system. This practice, of course, is not recommended if cost of water is high. Then, economical considerations enter the picture and a cooling tower, evaporative condensor, or spray pond is indicated to recover the water for re-use in the condensors.

If a spray system is installed on the roof, it will be necessary to be sure that the roofing is in good state of repair, with special attention to the gutters, flashings, and down spouts or leaders, so that no leaks will develop from the constant presence of water on this area.

Fans

If the contractor proposes the locating of fans or other heavy equipment in any part of the stucture, other than the basement, the structural supports should be checked by a competent engineer, and the contractor required to install any additional supports or reinforcing that may be necessary to carry the additional imposed load. Special care regarding this procedure should be taken in cases where equipment is to be installed on the roof.

The location of the fans and compressors is very important because of possible noises and vibrations which may be very annoying to the audience. This equipment should be set on heavy concrete bases, and equipped with vibration eliminators. The outlet velocity of the large supply fan should be low, so that no sound of rushing air will result. Sometimes the gas piping from the compressor to the condenser will be attached to, or supported by, a structural member of the building. Such a situation will often cause annoying noises in the theatre, which can only be overcome by removing the support or connection, or by proper insulation of these members.

Fresh Air Intake

The fresh air intake should be so located that no excess amount of dirt, smoke from flues on adjoining buildings, or other undesirable odors will be drawn into the ventilating system. To so locate the fresh air intake is sometimes very difficult and expensive, and as a result many intakes are installed in exit courts or alleys, close to the ground, or alongside of a flue from an adjoining restaurant. Such installations will always be a source of annoyance and complaints and will eventually have to be changed.

Consideration should also be given to the location of the exhaust vents from the system, as it is possible to locate these where they would be a nuisance to the adjoining porperty owners.

Location of Equipment

If the air-conditioning equipment is to be installed within the existing confines of the theatre, there is a possibility that the space assigned may be too small, with the result, that it will be very difficult and expensive to service this equipment or to remove and replace certain parts which will surely wear out during the life of the equipment. If different parts of the machines are too difficult to get at, these will be neglected with the resulting repair expense.

If no adequate space is available in the existing structure the cost of building an addition or a pent house will be returned many times during the expected life of the equipment.

9. ELECTRIC WIRING

No attempt should be made to skimp on the quality of electric wiring in the theatre building. Cheap installations may result in the untimely destruction of an otherwise substantial amusement center. Only an unwise owner would make the decision of being penny-wise and pound-foolish. If the electric wiring job is done right and under expert guidance, potential fire hazards can be reduced and the harm caused by faulty wiring eliminated.

Cost

More often than not, an insufficient sum is included in the remodeling budget for wiring. Unless the wiring system has been kept up to date through the years, the cost of making the wiring system safe and in accordance with the requirements of the newer codes and the underwriters, will be high. Even though the owner may not wish to concern himself with these requirements, he may find that an authorized inspector will insist on certain changes in the system before issuing a permit for continued operation.

It is, therefore, much better in the long run to make a thorough investigation before the budget is made up, and be sure that sufficient amounts are included.

On the other hand, it is possible, with an intelligent layout of the new lighting, to cut down on the total wattage used under the existing conditions, and thereby, over the period of a few years more than recover the cost of the new electrical work.

Most Economical Rate

It is advisable, even if no change in the electrical wiring is deemed necessary, to confer with a representative of the utility company servicing the building, and in conjunction with the architect or engineer, determine whether or not the proper metering hookup is in effect and whether or not the bills for electric current used are being rendered under the most economical rate. All companies have several different rates, one of which will be the most economical in each particular case. A change in the rate will most definitely occur in case additional motors for air conditioning, etc., are being installed. Special attention should be paid to the demand charge, which is often neglected, and is a definite charge each month by the power company based on the connected load, or determined by the installation of a demand meter. This subject is perhaps too technical to go into further here, but the owner should be aware of this condition and know definitely what the demand charge is, and have the metering checked by a competent electrical engineer, and act on his advice. One saving can generally be made by arranging to disconnect the large motors on the air conditioning equipment during the months when cooling is not required.

Current-Saving Dimmers

If it is necessary to replace the wiring in the auditorium proper for any reason, a considerable saving in the cost of installation of the wiring can be effected if these lights are controlled by the auto-transformer type of dimmers, which are different from the resistance type, in that they allow only that amount of current which is actually being consumed at the fixtures to be used. With this type of installation only one wiring circuit is required to the fixtures, which can be dimmed from "full on" down to "out" for the picture lighting. This equipment can be either hand operated or automatic.

Emergency Lighting

For emergency lighting as required by all codes, two 500-750 watt outlets in the main ceiling, connected to the emergency panel, and with a secondary control by the installation of three-way switch in the janitor's closet or where it is accessible to the night cleaners will serve the requirements for both emergency service and cleaning illumination.

10. EQUIPMENT

This section discusses chairs and their installation in the auditorium; and the laying and sewing of carpets. Both chairs and carpets, if properly selected and installed, can add greatly to the theatre-goer's satisfaction and enjoyment of the show.

New Chairs

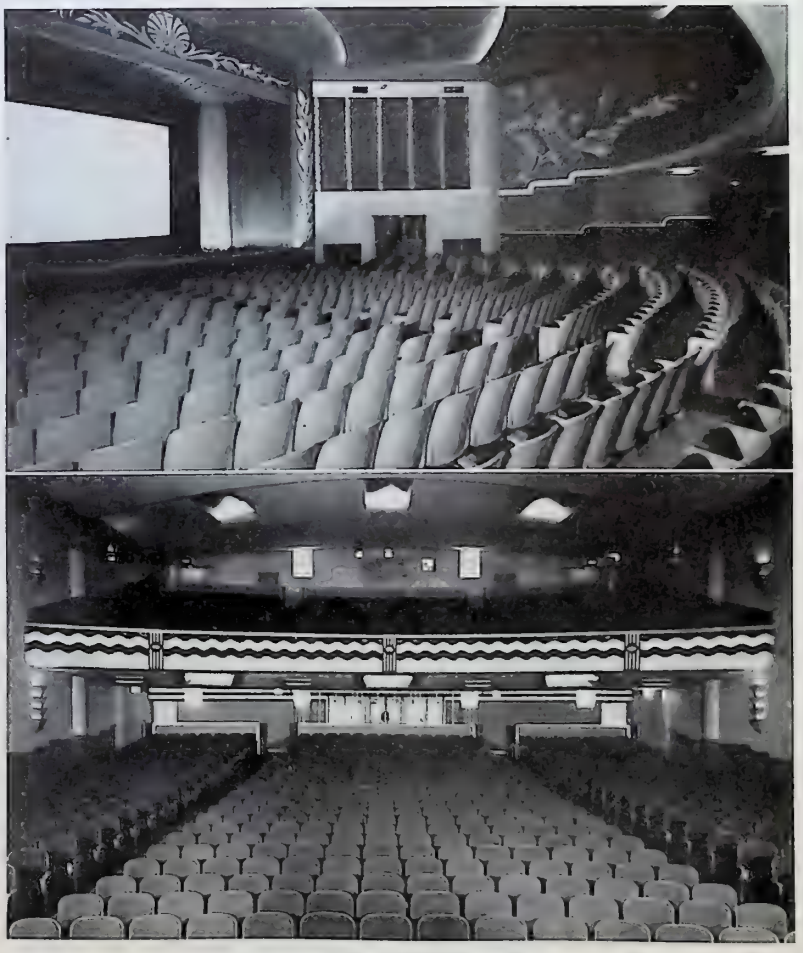
In most cases of theatre remodeling the subject of new chairs or seating will be considered. If new seats are to be installed, the existing seating arrangement should be checked, with special attention given to the spacing between the rows. If the present spacing is less than thirty-two inches from back to back, and no change in this spacing is contemplated, then the backs of the new seats should be of the type which will take up as little space as possible and still provide a certain degree of comfort. The thinnest seat back available would be a 5/16" plywood back. The thickness of seat backs increases from the above through many different types up to the thickest one which is the full floating spring back.

Backs

The different types of backs which are standard for theatre seating are as follows:

- 5/16" Plywood, Plain
- 5/16" Plywood, Cabinet Roll Top
- 7/16" Plywood
- ¾ " Plywood
- ½ " Inserted Panel, Wood Margin
- ¾ " Inserted Panel, Wood Margin
- Cabinet Frame
- Padded
- Metalclad Padded

THE 750 SEAT CITY, Granite City, Illinois, which Architect Leo F. Abrams designed for St. Louis Amusement Company is equipped with American "Bodiform" chairs installed by National Theatre Supply Company. The 1149 seat Delman, Tulsa, Oklahoma, has 733 Ideal Slideback chairs on the main floor and 416 Ideal "Chief" model chairs in the balcony. Both present good examples of modern seating.



Full Upholstered
Metalclad Spring
Padded Spring
Box Spring
Full Floating Spring

Not all seat manufacturers supply all types of seat backs as listed above, but the list covers practically all the types which are available. The type of back recommended for the spacing of less than thirty-two inches would be the padded back. This is of a very comfortable and rugged construction, and is considered by many to be the most comfortable, even surpassing the comfort of the different types of spring upholstered backs. This will, of course, not be evident in a casual trial of the different types, since, for example, the full floating spring backs may feel much more luxurious and comfortable at the beginning than after two or three hours of continuous sitting.

Seats

As with the chair seats, theatre chair seats are furnished in several types of construction. The most commonly used are as listed below, viz.,

- ⅛" Plywood
- ¼" Plywood
- ¾" Plywood
- Padded (Squab)
- Box Spring
- Semi-Spring-edge
- Spring Edge
- DeLuxe Spring-edge

The cost of the different type of seat increases in accordance with the above list. These different seat types can be furnished in combination with any one of the back types previously listed, but of course it would not be reasonable to use a plywood back in combination with a spring-edge seat.

Attention is called to the different types of seats and backs to indicate to the purchaser of theatre chairs that the different combinations available, together with the different types of upholstering fabrics can result in a considerable variation in the price of the seats, and therefore, the make-up of the different components of the seat should be investigated before deciding from price alone that one seat may be the best buy.

Other Chair Parts

The other parts which make up the standard theatre chair consist of the end standards, intermediate standards, and the arm rests. The standards are generally the same for all types of each manufacturer's seats. The arm rests will vary in price from plain wooden rests through upholstered with plain or latex padding.

Some manufacturers charge extra for each aisle light fixture required by the seating layout, and some furnish as many of these as is necessary without additional charge.

In addition to the types of backs and seats listed above there is also available in limited quantities and at rather advanced prices latex rubber upholstering for both units.

Seat Standards

Seat standards are furnished in various slopes at the bottom to coincide with the varying pitch of the orchestra floor. The front leg of the standard should never vary, the necessary accommodation to the pitch of the floor being obtained by shortening or lengthening of the rear standard leg.

In cases where second-hand seats are being installed, the probabilities are that the standards will not have the proper slopes for the floor on which they are to be re-installed. In such cases the steel washers as shims should be used under either the front or rear leg of the standard to bring the standard to a plumb position when permanently attached to the floor.

In a case where seats originally installed on the orchestra floor are to be re-installed in a balcony or mezzanine where the individual steppings will be level, this requirement will be specially evident. In addition to this adjustment, it may also be necessary to adjust the slope of the seat back to a more vertical position for comfort and also for spacing if the balcony has steppings more than twelve inches in height.

In this connection, it should be emphasized that the proper installation of theatre seating is most satisfactorily accomplished both as to the final results and cost, by mechanics who specialize in this particular type of installation.

Carpets

The type of carpet best suited to the covering of theatre floors is that known as velvet weave. This is a short pile type, and especially woven to resist the hard wear to which it will be subjected in this use. The designs which are available, in this type of carpet, are especially adopted to this particular use.

Sewing and Laying

There are a few rules which should be followed in the sewing and laying of the carpet in order to gain the greatest amount of wear.

The spaces to be covered should be carefully measured, and the carpet sewed to the approximate pattern of the floor in the shop in as large portions as will be convenient to handle, thereby reducing hand sewing on the job to the minimum. Seams should be avoided at the points of greatest wear, such as at the head of the aisles, and stair landings. In laying out the carpet for the standee space and the aisles, the widths should run parallel with the aisles and should be continuous from the start of the aisles at the stage to the REAR wall of the standee space or foyer behind the last row of seats. This may seem impossible in some cases but can generally be worked out by careful layout, and it will save many hours of repair at these heavily used points.

Carpet should always be laid over a forty-eight ounce hair felt lining, which will take up any roughness or depressions in the floor, producing much softer walking qualities and preventing excessive wear on the carpet. Stair carpeting should always be cut sufficiently long and turned under at the end so that it can be shifted the width of the tread, and thereby give double the wear.

Unless carpet strips have been installed in the concrete floors, it will be necessary to drill these floors for wooden plugs approximately every six inches around the perimeter of the room and at other points where tacking is necessary. With the exception of the selvage edge the carpet should be turned under when tacked, and care should be taken to see that the carpet is tightly stretched, and laying even during the tacking.

Check List of Equipment

Following is a check list covering the items of equipment necessary for the proper operation of a motion picture theatre:

- Announcement Frames and Stands
- Hold-out Posts
- Hold-out Rails
- Hold-out Ropes
- Carpets
- Chairs (Theatre)
  - (Cashier's)
- Decorative Painting
- Directional Signs
- Exit Signs
- Display Frames
- Exterior Signs
- Changeable Letters
- Lighting Fixtures
- Electric Bulbs
- House Drapes
- Stage Drapes
- Wall Fabrics
- Acoustical Material
- Fire Extinguishers and Axes
- Furniture (House)
  - (Office)
- Lockers
- Picture Booth Equipment
  - Projection
  - Sound
  - Motor Generators
  - Picture Sheet
  - Horns
- Public Address System
- Rubber Mats
- Stage Rigging
- Ticket Chopper
- Ticket Machine
- Coin Machine
- Uniforms
- Vacuum Cleaners
- Cleaning Equipment
  - Mops
  - Brooms
  - Rags
  - Pails, etc.
- Towel Holders
- Waste Receptacles
- Sand Urns

11. CONCLUSION

As case histories, reported in THEATRE CATALOG prove, remodeling the theatre is frequently tantamount to erecting a new structure. Refurbished interiors and modernized exteriors accomplish the purpose of a new look without involving all the costs of a total building program.

Since remodeling the average theatre represents a major entry under the budget heading of "maintenance," the owner will naturally be interested in getting the job done right and holding expenses to a minimum. He can do this to best advantage when he has been made aware of necessary inspections, renovations and replacements which enter into all remodeling work.

The editors wish to point out that the preceding is a handy reference guide.

Sparkling New Theatres for Decrepit Old Ones

How One Theatre Design Firm During One Year Gave New Life to 16 Theatres in New England

Today, all over the country, thousands of theatres are undergoing remodeling operations. From Washington to Florida and Maine to California, theatres whose interior and exterior designs have been far outmoded are being changed into modern up-to-date houses. New designs in marquees, name signs, boxoffices, lobbies, standee-areas, lounges, rest rooms, balconies, and auditoriums are being used in remodeling projects where they are most easily adaptable.

Drab, cluttered lobbies and stairs have taken on a simple modern, but not modernistic, new look. Massive, rococo fronts have given way to the drama and transparency of glass in large masses, blocks, and huge mirrors. Island boxoffices have been shifted to one side, giving the theatre entrance appearance of great width. New lighting methods, acoustical treatments, and many more innovations in theatre design have been used to achieve an altogether new theatre without the prohibitive current structural cost.

Theatre owners everywhere, who have realized the importance of keeping pace with changing building trends, have discovered that although the war-time ban no longer exists, material and labor costs make it almost impossible for them to sensibly construct and properly finance a new house. Remodeling seems to be a sensible alternative, remodeling that would be a far cry from the baroque design of yesteryear, remodeling that would be in stride with the changes in public taste, and in many cases often results in a change in run and increased patronage.

A before-and-after study of current remodeling as experienced by WILLIAM RISEMAN and ASSOCIATES. Working for many different owners in their normal area, this firm of theatre design specialists has returned to active modern operation many an outmoded or inefficient "shooting gallery."

Typical of similar successful efforts elsewhere, this survey will serve to point up the possibilities which exist in old theatre structures.

All Photos Through the Courtesy of William Riseman and Associates

While it is obviously impossible to cover the entire mass of very commendable remodeling by some very able and prominent architects throughout the country, in any one edition of THEATRE CATALOG, it has been decided to single out just one who has been particularly successful with a large number of theatres in the New England states. His contribution is representative of the whole.

William Riseman and Associates, architectural designers of Boston, Massachusetts has designed and remodeled 16 in the past year. Eleven of the 16 are presented on the pages that follow with their respective problems, and what the Riseman organization did to overcome them.

Through a minimum of words and a most understandable follow-the-arrow technique, these sixteen pages contain many valuable ideas that theatre men can check with their own local architects for their adaptation to future remodeling efforts.

All of this has taken place in New England. But in Texas, Oregon, North Dakota and Mississippi the same trend persists. This is not redecorating or refurbishing of the old; but a complete creation of new and sparkling theatres.





ABOVE: The State, Nashua, New Hampshire.

BELOW: The Astor, Boston, Massachusetts.









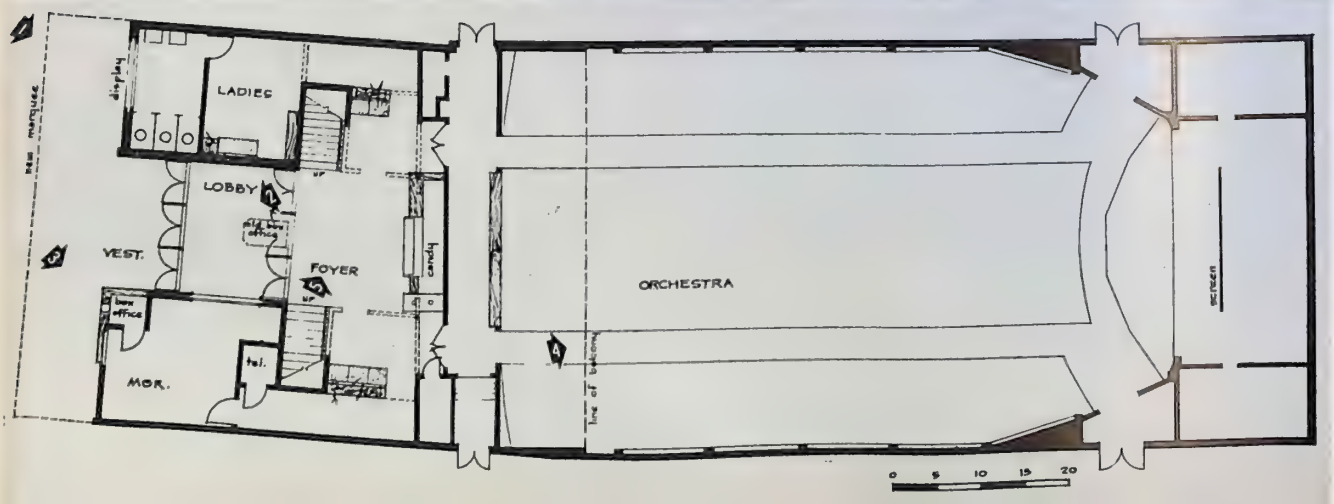
In Newport (N.H.) •

THE CONISTON had been operated for years by the original builder, and only recently was purchased by one of the large chains. The problem was to improve the obsolete and inadequate facilities and to present a more inviting appearance that would maintain its standing in a highly competitive location.

The remodeling cost was $43,000, plus chairs and carpets totaling $13,000 more. A wide marquee, relocation of the box-office, replacement of a large pier by a small cylindrical column, enlarging and relocating of the confection stand, removing partitions in the foyer, and opening of stairways to the balcony, created an illusion of great spaciousness. New lounges and a manager's office were made from the properties flanking the lobby.

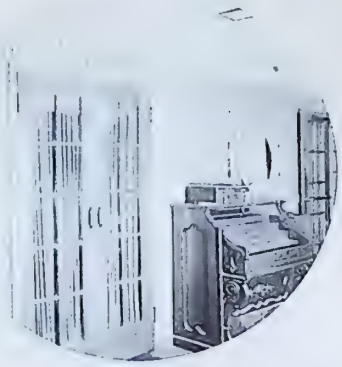
RESULT: Admission prices were raised, and patronage noticeably increased, especially from the residents of the summer resort colony.

THE LADIES' LOUNGE is carried out in highly lacquered birch plywood with mirror panels and modern ceiling lighting.




2
3
4
5
Candy





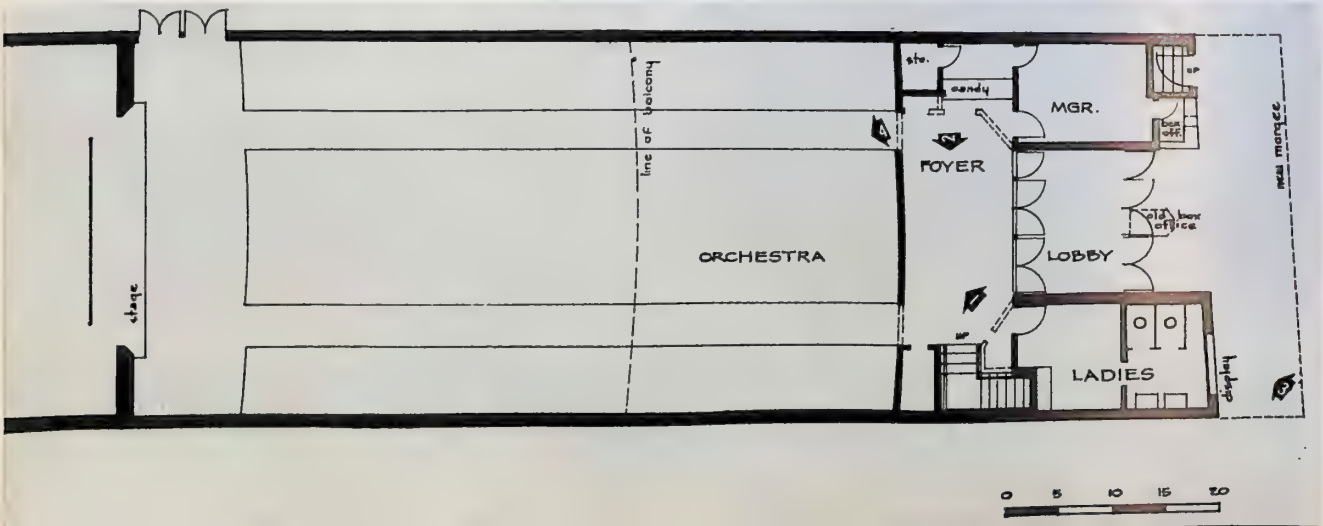
In Wareham (Mass.) •

THE WAREHAM, under its former name The Warr, had been sadly neglected for more than a decade, and was in great need of modernization. Recently purchased by one of the large chains that wished to attain modern standards of design and appointments at a minimum cost, a secondary problem was to conform to the architecture of its area.

The remodeling produced a 558-seat acceptable theatre, and cost $38,500. Native New England materials were used in a contemporary manner which harmonized with the traditional architecture but expressed the function and esthetics of the modern era. The lobby and vestibule were widened; the island boxoffice was moved to one side and wrapped around a small round column which replaced a large masonry pier; and the effect of greater size was further accentuated by an oversize marquee stretching on either side of the entrance. While simple in line and treatment, attention was commanded through contrasting materials and strong lighting.

RESULT: First run pictures at an increased admission scale (60c); and a pronounced increase in patronage. Added display and efficient merchandising of confections further increased the gross.





WAREHAM
3
4





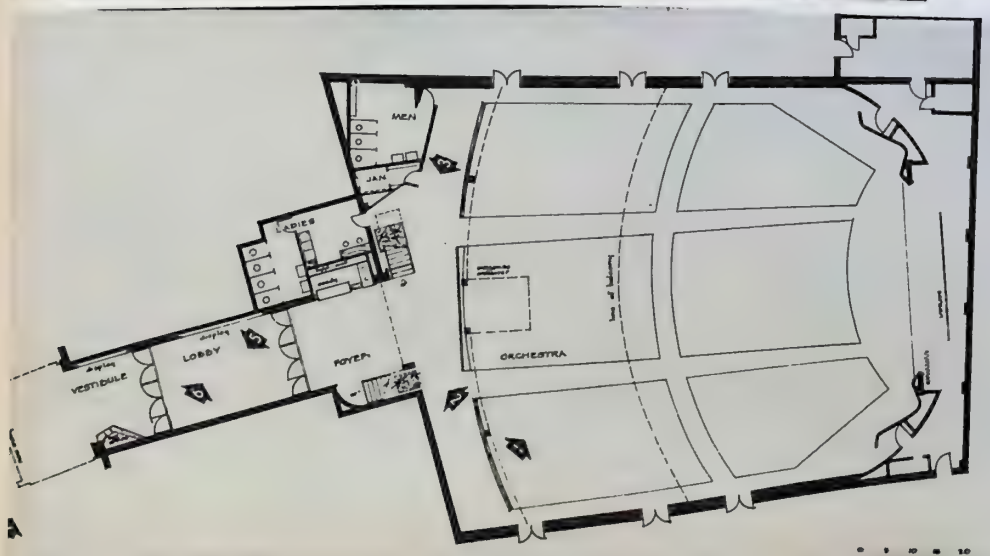
In Hartford (Conn.) •

THE STRAND was in a busy location and possessed 1450 seats; but its nervous hodge-podge of glittering ornamentation was long since obsolete. The problem was to convert it into a spacious modern first-run. A new marquee pulsates with light and animation; and a narrow lobby was treated with mirrors. New lounge rooms, carpeting, upholstered settees, generous mirrors, and a softly lit, restful auditorium completed the transition. The cost: $126,000 for remodeling, $35,000 for seats and carpets, and $22,000 for air-condition.

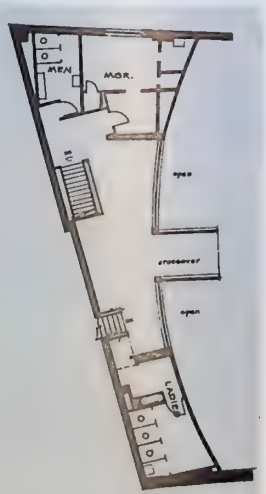
THE RESULT: First run stature, 75c admission scale, and more patronage.





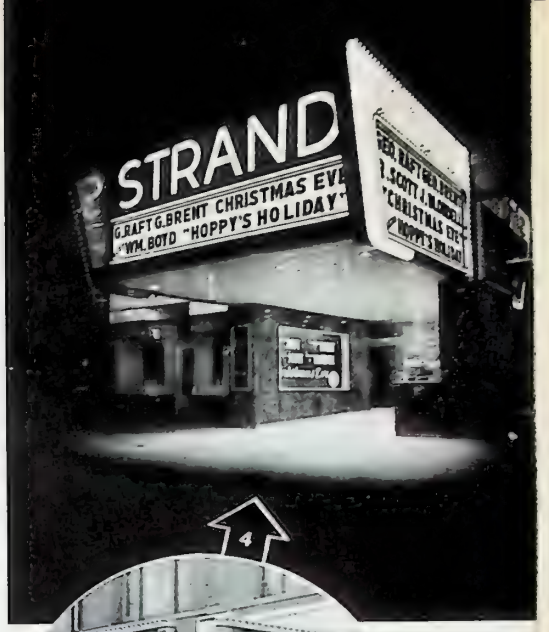


FIRST FLOOR PLAN



MEZZANINE PLAN




STRAND
G. RAFT G. BRENT CHRISTMAS EV
WM. BOYD "HOPPY'S HOLIDAY"


STRAND
STRAND








GRANT
YOUNG
AND THE BISHOP'S WIFE



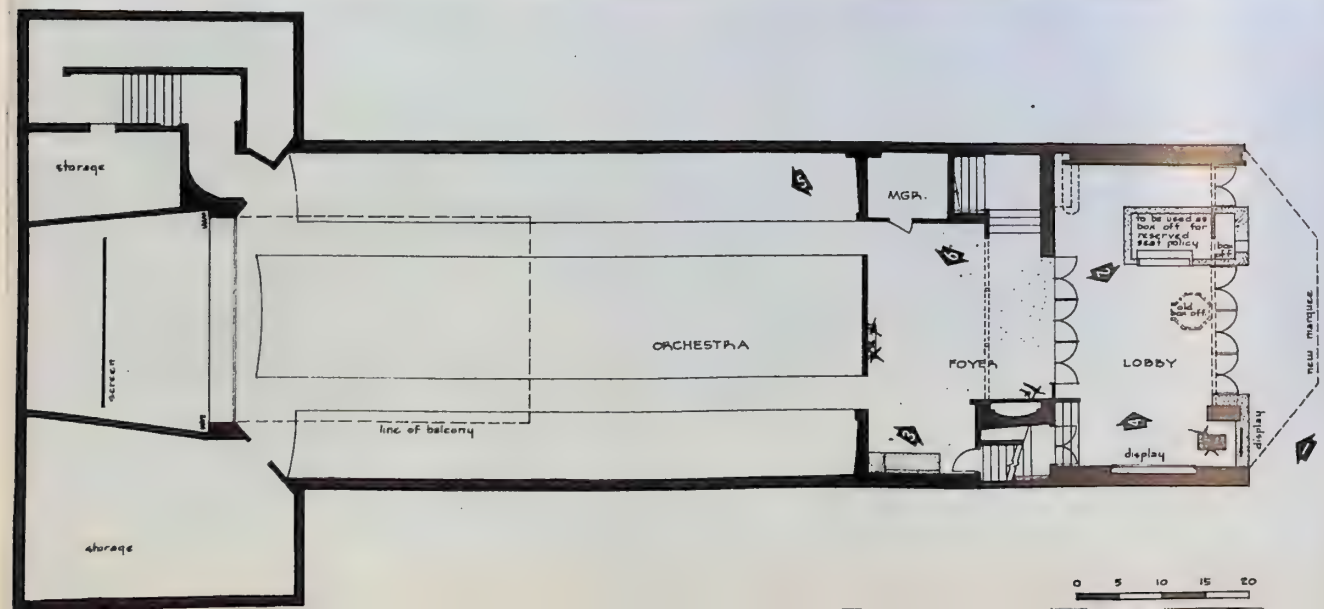




In Boston (Mass.) •

THE BEACON HILL, formerly the old Beacon, was situated on the border between a district of pin-ball amusement palaces and an elite shopping center. The problem was to convert a shabby building into an exciting and sophisticated one for the showing of special and foreign films to the more refined and lucrative side. The open arcade lobby was streamlined and glazed; all gaudy ornamentation was removed; a wider marquee and large, dramatic display cases replaced the old; and the island boxoffice was replaced by a dual purpose one at the side. Ceilings were lowered and simplicity and warm intimacy ruled. In the auditorium, low budgets limited the changes to paint, fabrics and lighting, and a complete new air conditioning system. Costs: $35,000 for remodeling and $16,000 for equipment.

THE RESULT: "Class" product was obtainable; admissions were raised to reserved seats at $2.40, $1.80 and $1.20; and a better type patronage was encouraged.

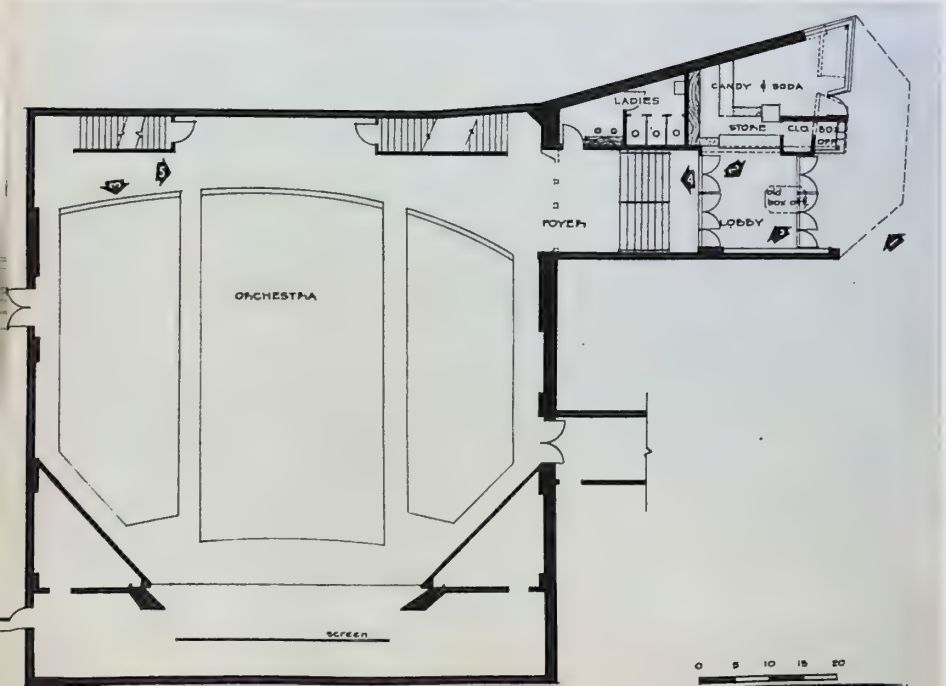


3
4
5
6







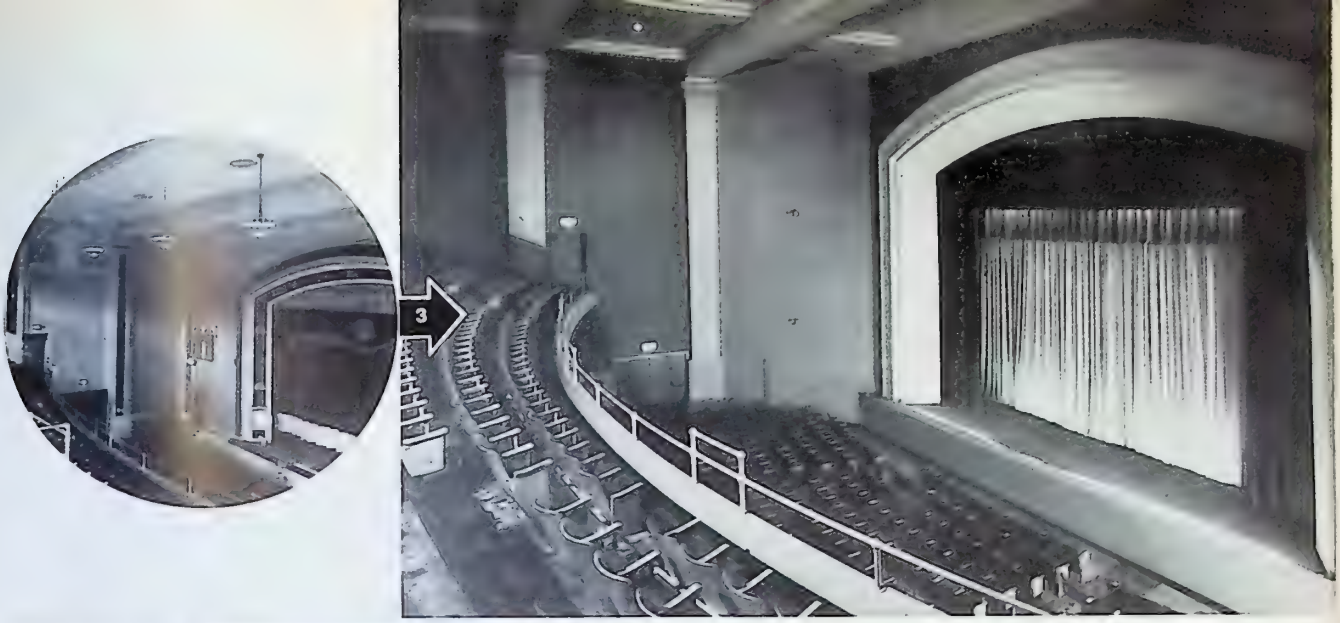


In Pawtucket (R.I.) •

THE CENTER, formerly the Capitol, was well located in a busy district and had 1385 seats; but it needed rejuvenation to maintain a good run and admission scale (55c). The problem also, was to combine the theatre candy stand with a refreshment store so they could function jointly or separately as conditions demanded and facilities permitted.

The marquee was extended to embrace both properties and give importance to each; the boxoffice was relocated and structural glass doors were added in order to open the lobby; a new ladies' lounge was installed; and the removal of ornamentation, new lighting, painting and new drapes in the auditorium, completed the transition. Costs: $34,000 for remodeling, and $15,000 for equipment.

RESULT: An especially great increase in confection sales both inside and outside of the theatre; an increased patronage; and the better type of pictures that had been the objective.


3


4
ALWAYS 2 BIG FEATURES


5

In Fall River (Mass.) •

THE STRAND was situated in a thickly populated area of industrial workers but the years had made it obsolete and inadequate for its three-change-weekly policy. The problem was to provide a completely new environment.

The entire shell of the building was gutted from marquee to screen; the auditorium was completely redesigned; the condemned balcony was removed and a new projection room added; new men's and ladies' lounges were provided; and a portion of an adjoining courtyard was incorporated to enlarge the candy sales area. The front and lobby were streamlined and a spacious effect gained through mirrored walls and glass doors. Costs: $85,000 for remodeling, and $30,000 for equipment.

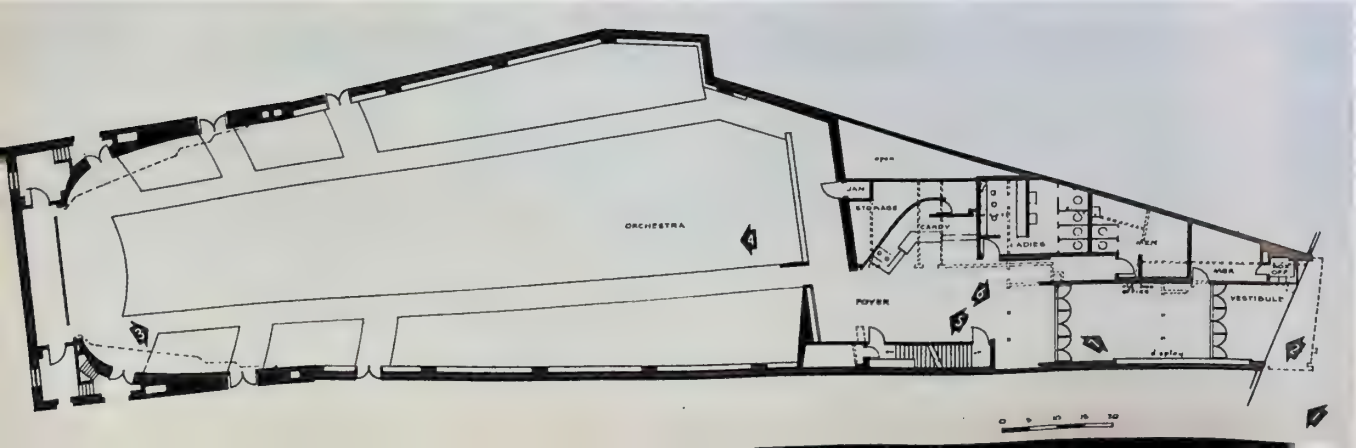
RESULT: A 1080 seat modern theatre; an increased admission scale; and a sizeable increase in patronage.







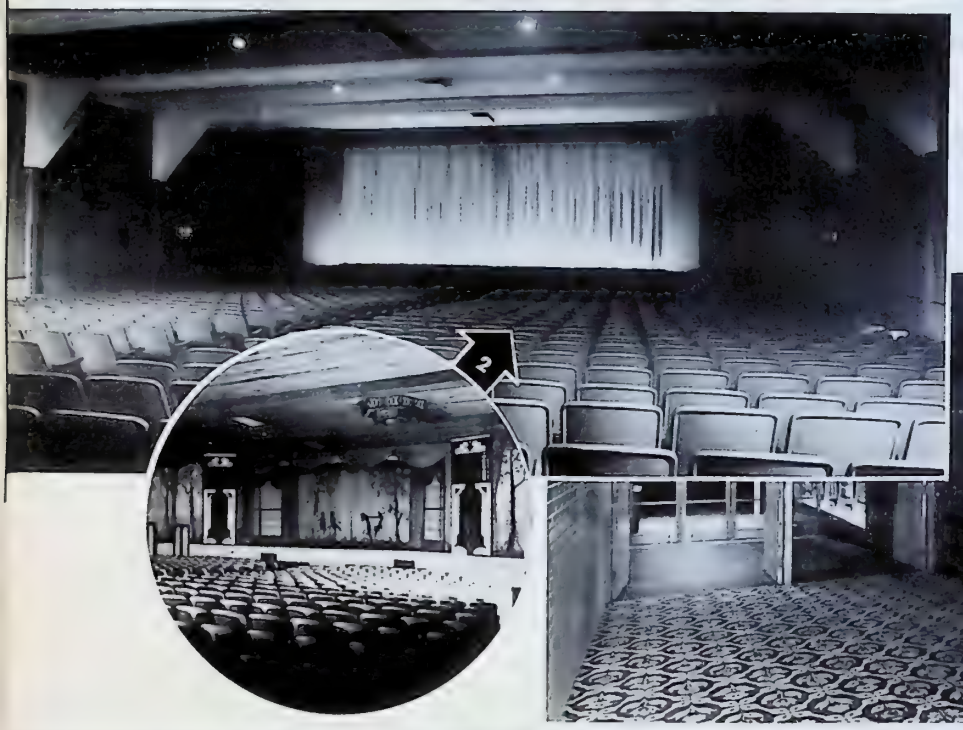




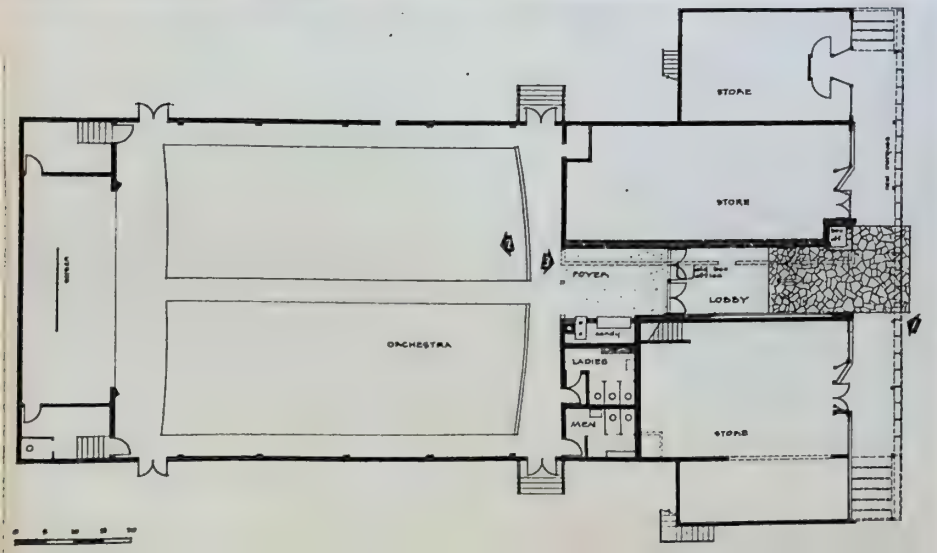

3
4
5
6
7











In Madison (Conn.) •

THE MADISON was a rundown, barn-like structure of 600 seats, that was inadequate in both function and public safety. The problem was to improve such inadequacies and blend the design into the colonial nature of the town.

New masonry fire walls were erected on either side of the foyer; the lobby was widened; a new plaster ceiling and a fireproof projection booth were installed. The front and adjacent stores were completely done over for increased rentals. Costs: $52,000 for remodeling, and $8,000 for equipment.

RESULT: First-run pictures at a higher admission price; and a hearty welcome by increased patronage.











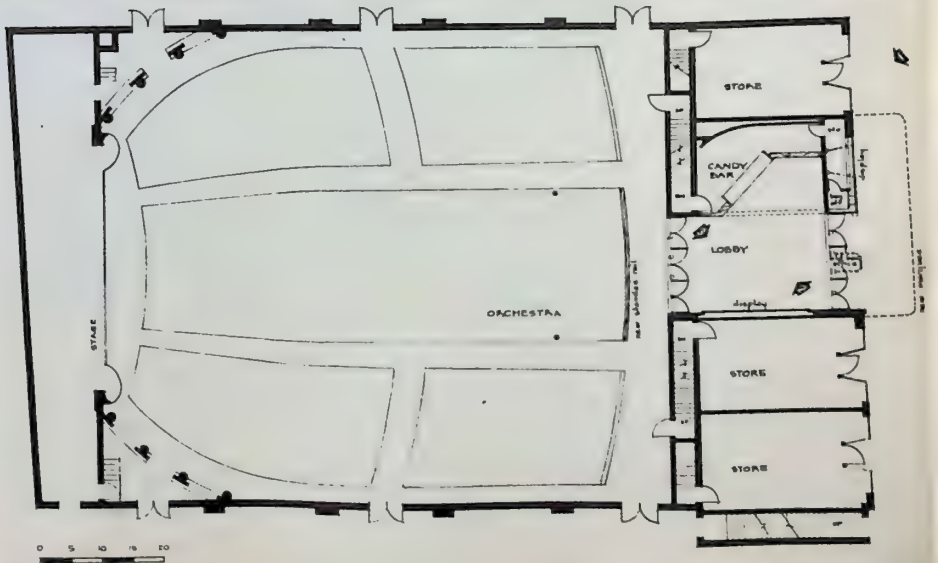


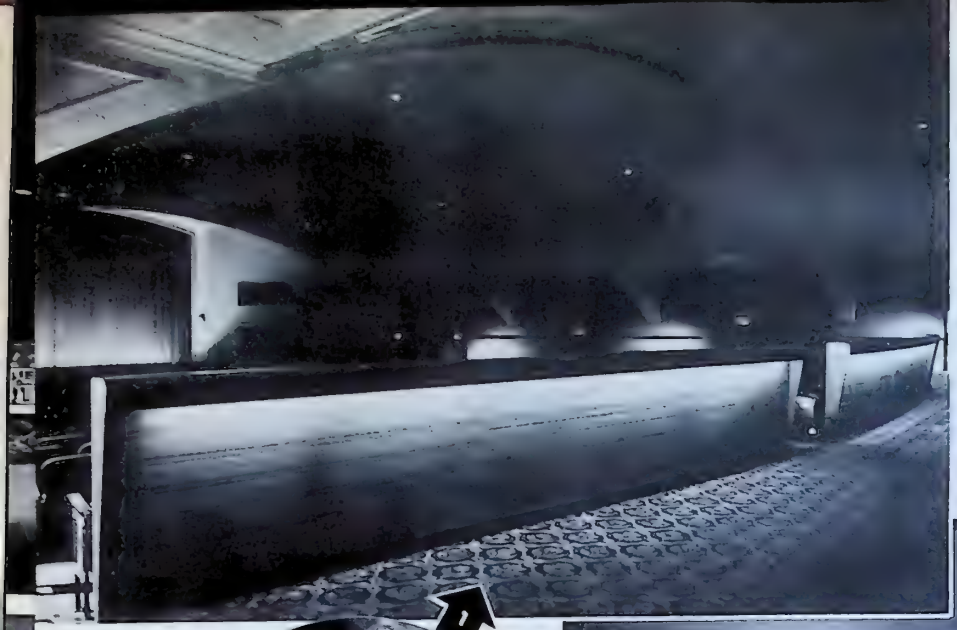
In Thompsonville (Conn.) •

THE STRAND, seating 985, was located in a relatively small town and, having little competition, needed only a more efficient confection sales area and a general improvement in appearance.

The brilliantly lighted new marquee was extended to gain an effect of bigness and provide attractive show selling areas; additional frontage was acquired and converted into a large lobby stand; glass doors and transoms opened the lobby stand area to view from the street; and diagonal striped matting focused attention upon it. Total remodeling cost $22,000 restricted to the front area.

RESULT: A bright new modern effect of which the townspeople could be proud; and increased revenue from both box-office and the confection area.











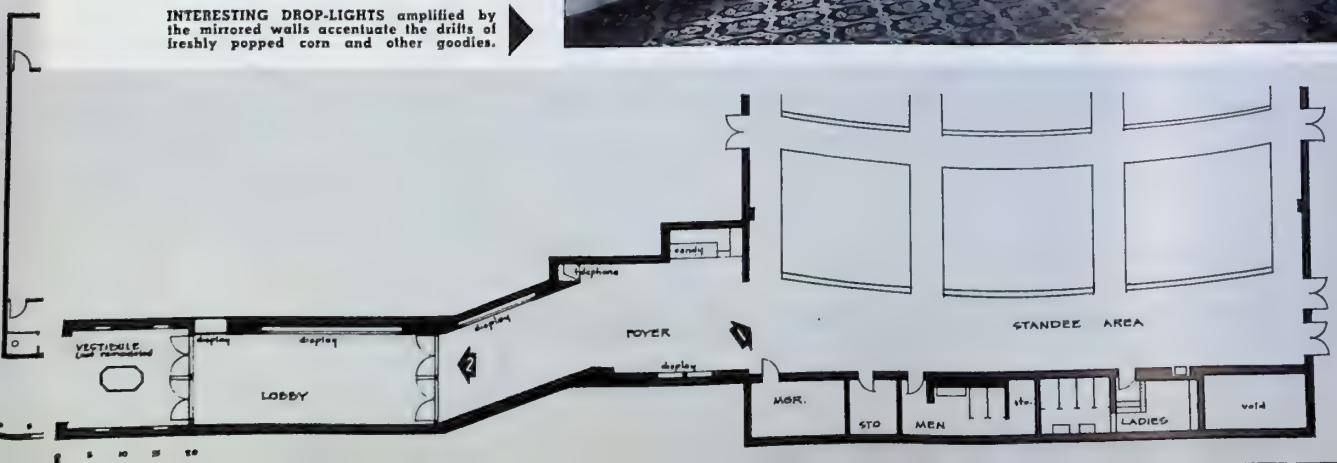
In Southbridge (Mass.) •

THE STRAND had reached a limit of general disrepair, but economy held alterations to the interior. The objective was to increase candy sales, better lounge and toilet facilities, and generally improve. The confection area was enlarged and gained attention; toilets and lounges were made larger and better appointed; the monotony of the long lobby was broken by contrasting colors, textures and ceiling heights; and the larger 1600 seat auditorium was painted and newly lighted. Costs: $30,000 for remodeling, and $2,000 for new carpet.

RESULT: A uniform increase in confection sales, boxoffice receipts, and naturally in number of patrons who were naturally pleased by the transition.



INTERESTING DROP-LIGHTS amplified by the mirrored walls accentuate the drifts of freshly popped corn and other goodies.



A Study in Low-Cost Quonset Construction

How One Operator Utilized Simplified Design And Materials To Reduce Building Expenses

Happy is the theatre operator who discovers ways and means of controlling costs, especially initial costs! And when he erects an attractive, well-equipped plant on a comparatively modest budget, even under the unfavorable circumstances of high prices and other economic headaches, the event is worth recording.

For many operators faced with the high cost of building, necessity is both the father and mother of invention. Take Albert Hefferan and the Crown Theatre in Marne, Michigan, for example. Mr. Hefferan, who in 1947 saw the handwriting of high rentals on the wall, solved the problem by moving from Coopersville where he had operated a theatre for years to Marne and building his own house.

A Quality Patronage

Marne, in Western Michigan, not far from the famous furniture city, Grand Rapids, is the focal center of a potential theatre audience of about five thousand, a predominantly well-to-do group of above-average education. This clientele obviously would not require a palatial metropolitan hall but would expect and demand up-to-date facilities and equipment. And that is precisely what Hefferan gave the Marne area citizens—the Crown Theatre, small in size but boasting appointments, facilities, and mechanical equipment that many larger theatres would be proud to own. Admission prices to this modern house were scaled low—33c and 13c; 40c and 16c, net with tax.

$61 Per Seat

Designed by Architect Emil Zillmer, of Grand Rapids, Michigan, the Crown was built with a seating capacity of 408 at a cost of $25,000 or about $61 per seat (not including equipment which cost another $25,000.) The savings made possible in the original building were applied to the purchase of the best available mechanical equipment. In the normal theatre construction of even pre-war days when costs were still within reason, this figure approximated $100 per seat, a considerable differential in reverse direction when the prices of the two periods are considered.

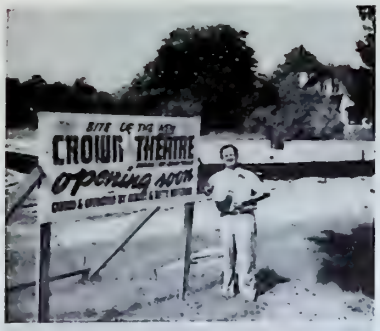
Construction Data

The answer is Quonset construction. Hefferan very wisely utilized prefabricated Quonset steel units for his auditorium assembly; and grey haydite blocks and concrete, painted with waterproofing compound, for entrance and boiler room sections at the front and back respectively. The finished building, set on a lot 100 feet wide and 400 feet deep, is an outstanding example of the unusually effective and economical theatre design to which Quonset construction can be adapted by artistic planning and skillful engineering.

The Crown lies along a straight axis and has a 42-foot frontage. The Quonset auditorium is 80 feet deep; the front structure 12 feet deep. Set back from a street of old maples, the building is reached by sidewalk through frontage planted in glass and shrubbery. At the rear is a large parking space.

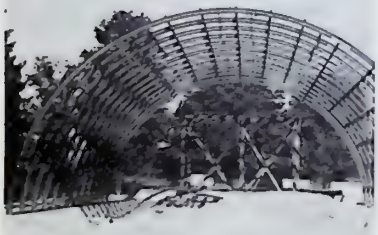
NEUTRAL SHADES of Celotex plank affixed to furring strips follow the contour of the quonset arch with good acoustic results. A light cove, eight feet above the floor provides all necessary auditorium light for patron safety.













LEFT: Simplicity of quonset arch construction can be easily followed through these progressive views. From the pouring of the concrete foundations and floor slab through the arches and purlins a simple box scaffold is the key.

Excavation was required only for the auditorium floor grade, which over a length of 52 feet amounts to 41 inches. The Quonset section, entrance area and auxiliary space, including the projection room, rest on concrete footings, and all joists and floor slabs are concrete. The main theme throughout the building shell and housing structures is one of economy.

Temperature Control

Economy, however, did not become a fetish or deprive the cash customers of any of the features they have learned to associate with the best houses. Inside the theatre, Hefferan provided ideal temperature control for twelve months of the year—air conditioning in the hot and humid tropical days; radiant heating in winter weather.

Designed to maintain a consistent temperature of 70 degrees even during sub-zero weather outside, the radiant heating system, a gridiron of hot water pipes, lies buried in the concrete flooring of both the ground level and the second level above the front traffic and toilet area; and—this is a particularly valuable advantage in any small hall—occupies no space within the auditorium proper.

The pipes are laid out so that the colder areas near doors and windows and outside walls, distribute more heat than the inner protected areas; and the entire system is spaced to produce an even temperature throughout the room. Most of the heat is distributed from the aisles, side walls and front and rear of the auditorium. Only sufficient pipe is located below the seating area to keep the floor warm without overheating the audience. The heating unit is an oil-fired steel hot water boiler.

While heating of the Crown is accomplished by the method described above, ventilating and cooling are provided by a duct system with re-circulation, and into this is introduced, at the mixing chamber, cooling coils which are supplied with cold water from a 480 foot well which also supplies water for drinking and for sanitation purposes. One supply duct extends down the middle of the auditorium ceiling above the Celotex ceiling and is equipped with Barber-Colman aspirating diffusers. The air-intake is above the screen platform, where Reynolds double-width, double-inlet blower is mounted along with filters.

Because of the different quantitative heating requirements of the main auditorium and the other rooms in the Crown, two zones were established, each controlled by separate thermostats—Zone No. 1 serving the main auditorium and Zone No. 2 heating the remainder of the rooms. An outside thermostat coupled with a high-limit inside thermostat prevents unnecessary waste of heat. The radiant heating system was engi-











RIGHT: The two-story front and entrance area, including the projection booth, is a separate structure built of haydite block with metal casement windows and the marquee canopy. Its progress from foundation to roof is here recorded.

neered and installed by Vernon C. Dean, Professional Mechanical Engineer, of Grand Rapids, Michigan.

Private Screening Rooms

Nor was bodily comfort Mr. Hefferan's sole enticement to patrons. "Cry rooms" on both sides of the projection room, above the entrance lobby, give harassed mothers an opportunity to take young children out of the auditorium without missing the show. The location of the "cry rooms," window seating with adequate window space, and adjustable loud speakers, permit full enjoyment of the picture. In addition, the incorporation of these facilities—particularly valuable in an intimately-dimensioned auditorium—provides a satisfactory answer to the baby-sitting problem; prevents spoiling the picture for the other spectators.

Other Modern Points

The ticket office, entirely inside the lobby, is located immediately to the left of the entrance doors. It has a counter flush with the lobby wall, and extends into a passageway off the standee area, a passageway which also gives access to the men's and women's toilet rooms. These adjoin each other on the outer side, each having a window of obscuring glass.

From the passageways on each side of the lobby, where storage space is provided, stairs lead to the second level.

Over half the width of the second level is devoted to the projection room, which is approximately 20 x 12 feet. Projection equipment includes Motiograph projectors and dual channel sound system and Strong Mogul projection lamps.

The auditorium is finished in furred-out sections of Celotex board, applied in three tones. Between this inner wall and the Quonset sheeting, rock wool insulation has been inserted, while Celotex insulation is part of the roof decks of the haydite structures.

Illumination of the Crown is largely by fluorescent fixtures, but cove lighting, on white and color circuits, is provided along the auditorium sides at an eight-foot height.

Equipment and Furnishings

Seating, by the Ideal Seating Company, is arranged in three banks with row spacing 32 inches back-to-back. Chairs are upholstered in blue simulated leather with mohair backs while carpeting in the standee space and adjoining passageways, and in aisles, is figured in beige and shades of tan.

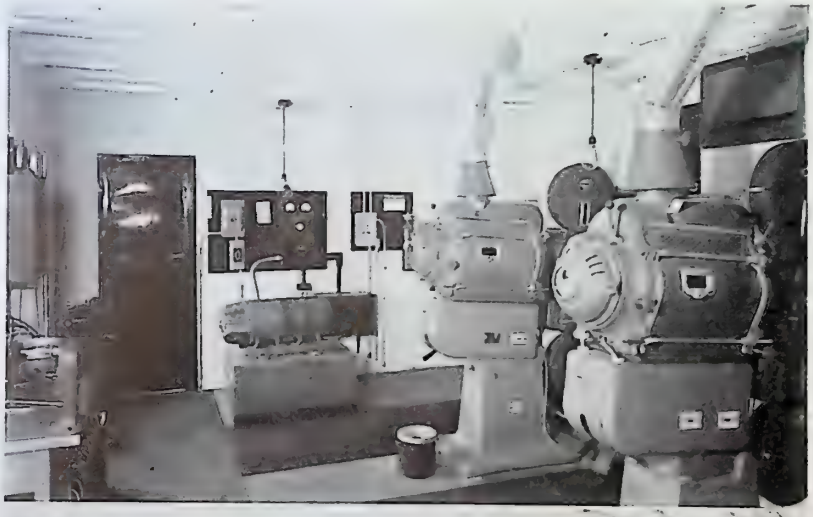
Floors of the lobby and toilet rooms are tile, and the latter also have tile wainscots. The men's room is equipped with one urinal, one water closet and a lavatory; the women's with a water closet, a lavatory and a cosmetic shelf.

In addition, credits not already mentioned include:

Changeovers—
Strong "Zipper"
Coinchanger—
Johnston
Curtain Controls and Track—
A.D.C.



ABOVE: The light cove steps in conformity to the floor slope. Two private viewing, or cry rooms, are on either side of the projection booth. Carpets are figured in beige and shades of tan. BELOW: When photographed the front was not as yet completed. Tasteful plantings of shrubbery and evergreens will be accommodated in the setback and around the entrance walk. The projection room is 20x12 feet and nicely appointed for efficient operation.





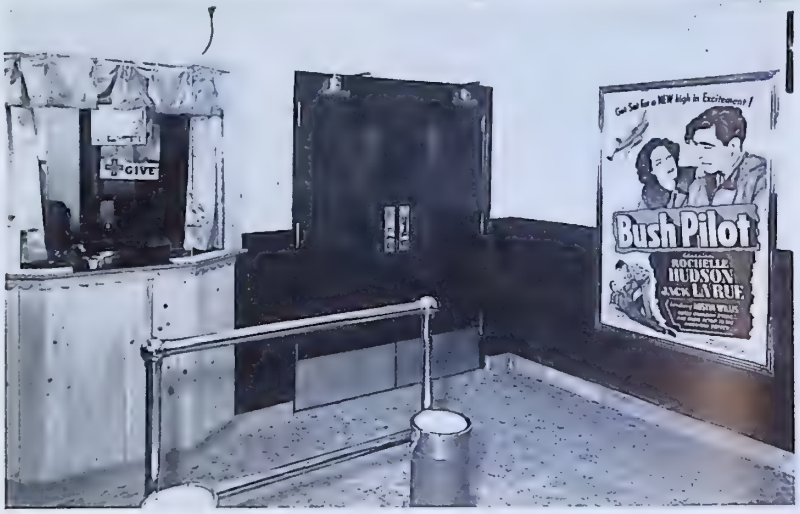


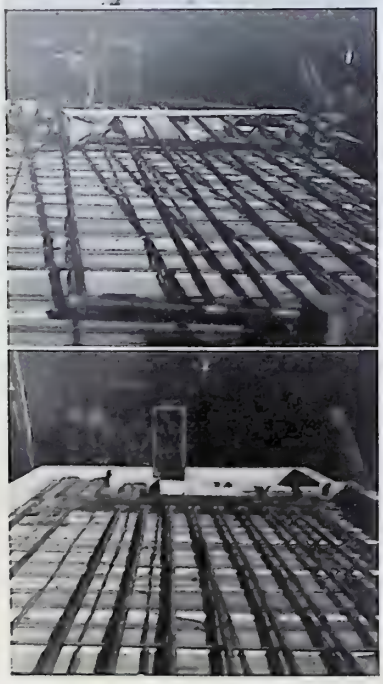
LEFT: Modern radiant heating, first introduced to the theatre field in the 1945 Edition of THEATRE CATALOG, is laid out and joined before the concrete slab is poured. Two zones control the separate heating of the first and second floors, insuring comfort.

Decorator—
G. H. Meyers
Draperies and Stage Curtains—
Mork-Green Studios
Generators or Rectifiers—
Robin Imperial
Screen—
Dalite
Sign and Marquee—
Van Houghten Neon Sign Company
Supply Dealer—
Ringold Theatre Equipment Co. and National Theatre Supply Company
Ticket Issuing Machine—
Automaticket
Ticket Chopper—
GoldE

Conclusion

In short, Albert Hefferan has made a huge success of his low-cost construction project. Not only did he keep building expenses down, but he turned out an attractive motion picture house, fully equipped for complete patron satisfaction. Thus, in the midst of economy, he avoided the old failing of pennywise and pound foolish. In an age that has been given television to play with, Hefferan knows that the old canned-sardine policy is outmoded and that the moving picture house operator now has to sell more than just a show. The Crown is his contribution to the new school of theatre psychology.





TOP: The knotty pine paneled ticket office is in the completely enclosed foyer adjacent to the doors leading through a short passage to the aisle heads. Floors and baseboards are tile and the equipment is modern. BOTTOM: Location and rural drawing area of the Crown can be noted from this air view. Heavily traveled U. S. Highway No. 16 and a large parking area adjacent to the theatre give it some of the advantages of the drive-in. Shining display cases, modern seating, and the latest in projection and air conditioning equipment, qualify the Crown for a place among theatres of the most modern designs. Other equipment installations are of the latest design.



Beauty Bonded

Formica Theatre Topics

★ ★ ★ FINAL

4544 Spring Grove Ave. FEBRUARY 1949 Cincinnati 32, Ohio

Formica Wins Acclaim of Theatre Architects

Recommendations Based On Durability, Beauty Of Product

Two words — beauty and durability—sum up the reasons why John and Drew Eberson, leading American theater architects, recommend Formica decorative plastic laminates in virtually every one of their projects.

Specifically, the Ebersons point to a host of outstanding advantages which they have seen proved during their wide experience in this field. With respect to durability, they cite the fact that Formica withstands hard usage with practically no signs of wear and tear, which holds maintenance costs to a minimum.

On the artistic side, the noted designers are quick to mention Formica's wide range of more than 60 colors and patterns, plus the opportunity to use metallic inlays, giving infinite range to the imaginative stylist.

The many applications they have found for Formica include entrance and foyer doors, drinking fountain back panels, candy and refreshment counters, counter tops in box offices, checking rooms and telephone booths, wall panels in lobbies and push and kick plates.

Evidence of the firm's reputation is found in its list of clients, which includes Warner Brothers, Loew's, Paramount, RKO and Universal, as well as scores of independent motion picture theatre chains.

NOTABLE WAR RECORD

As a Colonel of the U.S. Army Corps of Engineers in World War II, Drew Eberson directed construction of B-29 air bases in India, building of the Ledo-Burma Road, pipe lines from Calcutta to Kunming and depots for the Air Transport Command.

HE GOT AROUND

Born in a sawmill camp in the Carpathian Mountains, John Eberson has seen the land of his birth change from the flag of Austria to Roumania and finally to Russia. He came to the United States in 1901, after schooling in Dresden and at the University of Vienna.



John and Drew Eberson, noted father and son team of theatre architects, pictured here in their New York City offices where they have created designs for scores of theatres spread from Manhattan to Mexico City.

Father and Son Team Leads in Theatre Design

Few will challenge the preeminent position of John and Drew Eberson in the field of theatre architecture when it is considered that this team of father and son has designed more than 700 theatre buildings.

John Eberson, founder of the firm, has a record of over four decades in the practice of architecture and structural engineering. Son Drew, who entered the firm in 1926 after graduation from the Architectural School at the University of Pennsylvania, has supervised design and construction of buildings from Australia to Texas, including some $220,000,000 worth of military projects as a Colonel in World War II.

Their staff, with offices at 2 West 47th Street in New York City, and No. 9 San Juan de Letran, Mexico City, offers combined services covering selection of sites, designing, engineering and construction supervision. Staff members have a record of service with the firm averaging 20 years.

John Eberson has attained special recognition in the theatre design world as a "colorist," employing color as a medium to create ideal surroundings for motion picture presentation. Drew Eberson, with seven years' experience as a Hollywood producer and director, in addition to actual operation of theatres prior to joining the U.S. Army Corps of Engineers, is particularly fitted to the job of designing theatres with an eye to functionalism.

FOUNDED IN ST. LOUIS

What is today the firm of John and Drew Eberson was founded in St. Louis, moved to Chicago and then, some 15 years ago, to present headquarters in New York City.

EBERSONS FIND MATERIAL IDEAL

From Manhattan to Mexico City and from the Bronx to Bombay, theatre-goers see the architectural handiwork of John and Drew Eberson.

Practically every one of the 40 theatres designed by the Ebersons in recent years employs the enduring eye-appeal of "Beauty-Bonded" Formica.

The Ebersons have paid high tribute to the superiority of Formica by their constant specification of the product. Currently, they are adding to this endorsement by using it in some ten theaters under construction but not yet in operation. In the following list are names of Eberson-designed structures where Formica has been employed.

Penn Theatre, Ambridge, Pa.; Globe Theatre, Arlington, Va.; Volk Theatre, Palm Beach, Fla.; Sayville Theatre, Sayville, N. Y..; Regent Theatre, Bay Shore, N.Y.; Cheverly Theatre, Washington, D.C.; Coral Theater, Bradbury Heights, Va.; Regent Theatre, Amsterdam, N. Y.; Kaywood Theatre, Mt. Rainier, Md.; Downtown Theatre, Waco, Texas; Strand Theatre, Hartford, Conn.; Center Theatre, Mexico City; Capital Heights Theater, Maryland.

MORE, STILL MORE

Emporia Theater, N. Emporia, Va.; New Theatre, Bedford, N.Y.; New Theatre, Islip, N. Y.; Parkchester Theatre, New York City; New Theatre, Harrison, N.J.; New Theatre, Caracas, Venezuela; New Theatre, Balboa, Canal Zone; New Theatre, Harrisonburg, N.J.; New Theatre, Livingston, N.J.; Plaza Theatre, Milford, Del.; Colonial Theatre, Germantown, Pa.; Carver Theater, Washington, D.C.; Regis Theatre, Mexico City; Anacostia Theater, Washington, D.C.; Circle Theatre, Alexandria, Va.; Bedford Theater, Bedford, N.Y.

Celina Theatre, Celina, O.; Teatro Cine Reforma, Mexico City; Paseo de la Reforma, Mexico City, Embassy Theater, Washington, D.C.; Orfeon Theatre, Mexico City; National Theatre, Washington, D.C.

FORMICA ADVERTISEMENT



FOR BEAUTIFUL, PRACTICAL *Theatre Interiors* USE *Marlite* WALL AND CEILING PANELS

Lustrous, colorful, plastic-finished paneling that's quickly and easily installed, easy to keep clean – that's Marlite, the **modern** material for **modern** theatre interiors! Marlite's ideal for foyer, lobby, doors, powder and smoking rooms, and offices. Colors **stay** bright and maintenance is easy, for Marlite is **permanently** sealed against dirt, cosmetics, hair oil and other results of heavy public use. Occasional cleaning with a damp, soapy cloth keeps Marlite bright and sparkling, reduces maintenance costs.

Marlite wall size panels are easy to handle and quickly installed over old walls or new with ordinary carpenter's tools and a minimum interruption to normal business.

Marlite is available in a wide range of colors and patterns that match any decorative scheme. Ask your architect or building supply dealer for details, or write to the factory.

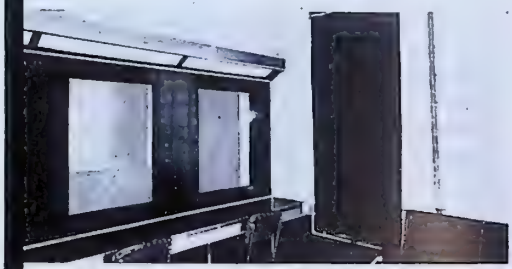
Marsh Mouldings and Washroom Accessories

The complete line of Marsh mouldings is designed to harmonize with the colorful beauty of Marlite. Marsh chromium accessories for powder and smoking rooms make the installation complete.

MARSH WALL PRODUCTS, INC.
4982 MAIN STREET, DOVER, OHIO



● *Modern foyer of Emery Theatre, Reading, Ohio, uses Rose de Brignoles Marble Pattern Marlite.*



● *Ladies' powder room, Bexley Theatre, Dover, Ohio, has sanitary, sparkling walls of Marlite plain colors, Coral, Black and Persian Red.*

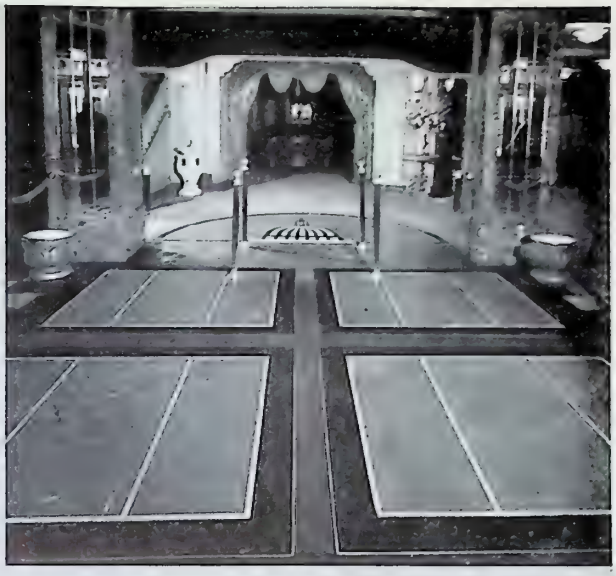


● *Foyer of Grand Theatre, Lancaster, Pa. with beautiful wood pattern Marlite on doors and walls.*

FOR CREATING BEAUTIFUL INTERIORS



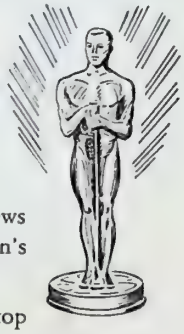
Tile-Tex Asphalt Tile is set for a "long run" at New York's famous Winter Garden Theatre.



Perfect casting for a he-man role. Tough Tile-Tex is a "natural" for area where traffic is heavy.

Tile-Tex voted "Oscar"

for amazing flooring performance!





Tile-Tex is the all-purpose flooring material for big theatre or small—for lobby, office, rest room or auditorium.

The whole industry is buzzing with news of Tile-Tex performance in the Nation's Theatres.

Read the rave notices America's top quality asphalt tile is getting: ". . . strikingly beautiful" . . . "all set for a 'long run' in my theatre" . . . "as colorful as Technicolor" . . . "he-man performance in a tough role" . . . "as much for your money as a Double Feature!"

Why not book Tile-Tex Asphalt Tile into your theatre. The nearest approved Tile-Tex flooring contractor can give you complete data on colors, sizes, patterns *and low cost!*

Write for his name to The Tile-Tex Company, Inc., (subsidiary of The Flintkote Company), Chicago Heights, Illinois. Sales offices in Chicago, New York, Los Angeles and New Orleans.

Asphalt TILE-TEX CO. INCORPORATED Tile

Tile-Tex Asphalt Tile

*REGISTERED TRADEMARK OF THE TILE-TEX COMPANY, INC.

TILE
TILE
TILE



Beauty with Utility....

★

View of the Milford Theatre, Milford, Delaware, showing the front lobby in beautiful tile design. American-Olean tile used also in all rest rooms. John and Drew Eberson Company, Architects.

★

There's nothing so beautifying for theatre lobbies as good, well designed tile work. There is nothing so economical to maintain or as easy to clean.

Tile withstands years of devastating wear. Its sturdy resistance to marring and the fact that it does not require painting saves you many maintenance dollars.

If you're planning to build or remodel, use tile—real tile—in lobbies, rest rooms and corridors. Ask your local tile contractor for information about an American-Olean tile installation.

AMERICAN-OLEAN TILE COMPANY

LANSDALE, PENNSYLVANIA

BEAUTY AT ITS BEST



Shown here is the National Theatre, Washington, D. C. in which Marble was used. Designed by the John and Drew Eberson Company, Architects.

- ***MARBLE*** **IS BEAUTIFYING**
- ***MARBLE*** **IS PERMANENT**
- ***MARBLE*** **IS ECONOMICAL**

Tile and marble contracting is our entire specialty. We do the complete job from start to finish.

Special colors and combinations expertly followed to specifications. Mosaic designs created if desired.

STANDARD ART, MARBLE and TILE COMPANY
(INCORPORATED)

Scagliola - Marble - Mosaic - Terrazzo - Tile - Ceramic - Slate

117 D Street, Northwest
WASHINGTON, D. C.

Build it better, faster, more economically with RILCO



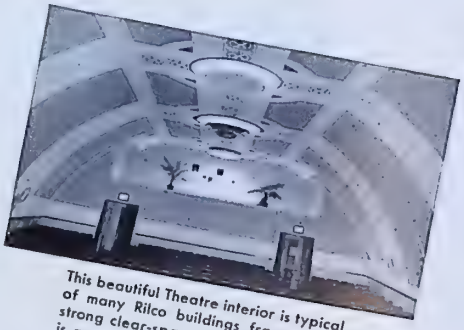
GLUED LAMINATED WOOD ARCHES AND TRUSSES

Profitable theatre operation directs more and more builders toward the new economies of clear-span construction with Rilco glued laminated wood trusses and framing members. Used for the first time on a large scale during the war, Rilco Construction offers big savings in time, labor and materials in Theatre and Community buildings.

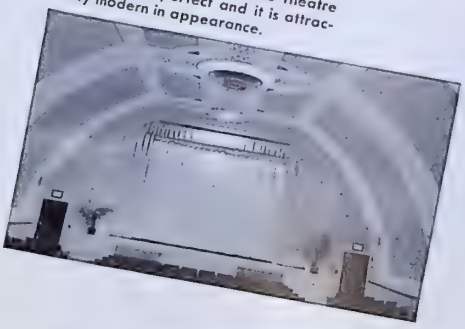
Available in pre-engineered spans of any required width, Rilco arches and trusses lend themselves to a variety of attractive modern Theatre designs. Both arch ceilings and flat ceilings in Rilco buildings provide good acoustical properties and exceptionally pleasing interior treatments are achieved.

Construction costs can be cut by spacing Rilco trusses, arches or rafters properly to permit the application of sheathing directly to them, thereby eliminating the need for roof joists or purlins. These framing members are delivered to the job site pre-fabricated and engineered, ready for quick and easy erection.

Investigate the many advantages and economies of Rilco construction before you build. Utilize wood, the most dependable building material, in its most modern form—the Rilco glued laminated arch. Let us tell you more about it before you build.



This beautiful Theatre interior is typical of many Rilco buildings framed with strong clear-span arches. The Theatre is acoustically perfect and it is attractively modern in appearance.



RILCO *Laminated* PRODUCTS, INC.

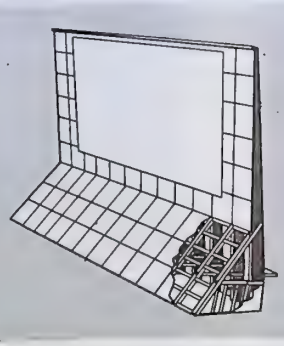
A WEYERHAEUSER COMPANY

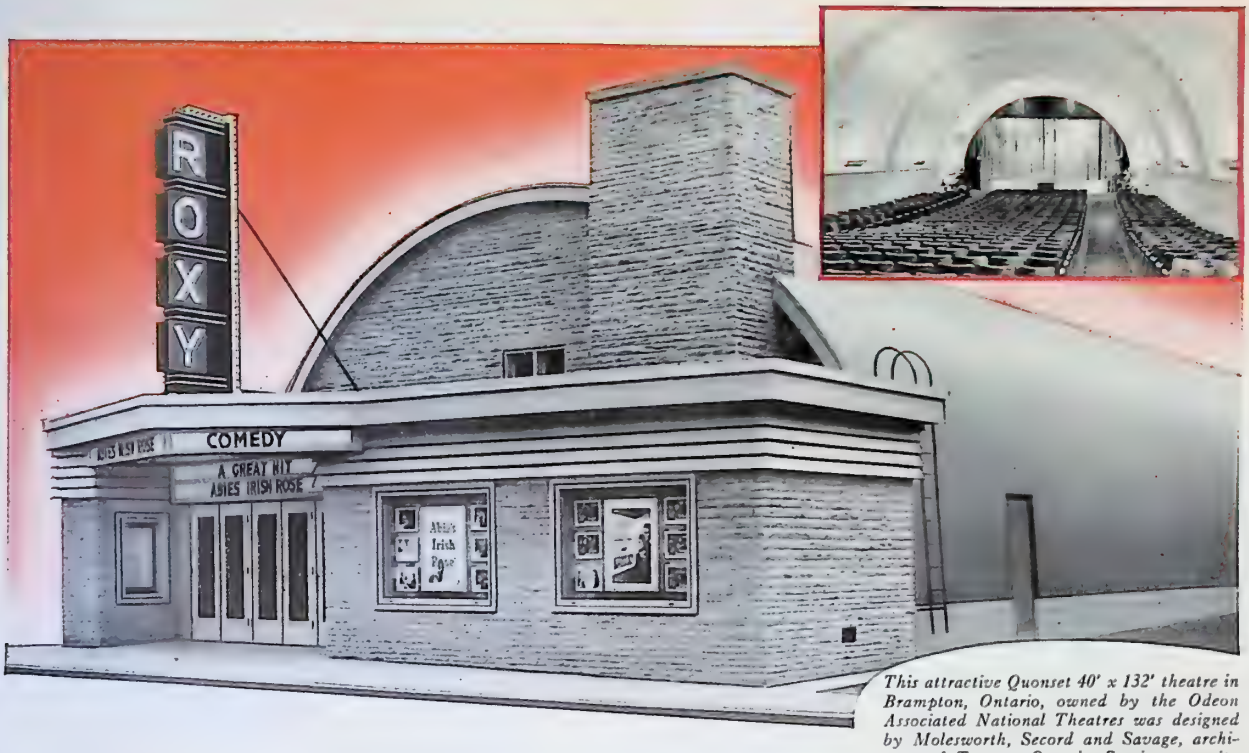
2599 FIRST NATIONAL BANK BUILDING • ST. PAUL 1, MINNESOTA

604 BROOKS BUILDING • WILKES-BARRE, PA.

RILCO MASTS FOR OUTDOOR SCREENS

Many operators have been waiting for this . . . a simple, cost-saving method of building the supports for the huge screens required in outdoor, drive-in Theatres. Instead of complicated structures of steel and concrete, the main support consists simply of a row of Rilco laminated wood masts. With them, the entire structure can be completed on the ground and swung into position, thus eliminating scaffolding and temporary bracing. Let us send you complete details.





This attractive Quonset 40' x 132' theatre in Brampton, Ontario, owned by the Odeon Associated National Theatres was designed by Molesworth, Secord and Savage, architects of Toronto, Ontario. Seating capacity 618 persons.

build a

small-community theatre at a new low cost

with the STRAN-STEEL *Quonset 40*

Quonset theatres are sweeping the country! Theatre owners have been quick to capitalize on the famous Quonset advantages . . . quick to take advantage of Quonset's easy availability, quick erection and exceptionally low cost.

Theatre owners like the smart, modern lines of Quonset theatres . . . they like the unlimited possibilities of interior and exterior design. The Quonset 40—forty feet wide and any length desired—gives plenty of scope for any arrangement or adaptation you like. Then too, box office figures show that customers are attracted by the remarkably good acoustics, the excellent ventilation and the attractive appearance of the Quonset 40.

Stran-Steel and Quonset Reg. U. S. Pat. Off.

Quonset's arch-rib construction assures fast erection because the *patented nailing groove* lets you nail other building materials directly to the steel frame . . . lets you use any insulation or interior decoration you like. Quonset's *basic building* of all-steel framing sheathed with steel gives maximum fire resistance, extra long life and lowest possible cost of maintenance. That means a higher percentage of your theatre's gross income is profit . . . means a higher rate of return on your investment.

If you are thinking of building a theatre, investigate the Quonset 40. You'll find Quonset is a better investment. You'll find that you will be in business faster and at lowest cost with Quonsets.

170 Quonset theatres are now in operation!

GREAT LAKES STEEL CORPORATION

Stran-Steel Division • Dept. T • Penobscot Building • Detroit 26, Michigan

UNIT OF NATIONAL STEEL CORPORATION

YOU NAIL TO STRAN STEEL FRAMING

58 *years of electrical contracting*



National Theatre Building — Washington, D. C. — Warren & Wetmore, Architects.



The Olympia Theatre Building, Miami, Fla.
John Eberson, Architect.

Harry Alexander, Inc., are electrical contractors qualified by experience and achievement to perform any type of electrical installation. That is why we were selected for the largest office building in the world, The PENTAGON. That is why we were selected to electrify many theatres, a few of which are shown here.



The Roxy—Famous Stage and Motion Picture Theatre—New York
W. W. Ahlschlager, Architect.

Harry Alexander, Inc., came into being in the year of 1891 when Westinghouse and Edison brought a new way of life to the world. We have always specialized in electrical work never before attempted. We have many "ELECTRICAL FIRSTS" to our credit.

That is why we say — IF IT IS ELECTRICAL, WE DO IT.

Harry Alexander, Inc.

ELECTRICAL CONTRACTING ENGINEERS

New York, N.Y. **Washington, D.C.**

DRIVE-IN THEATRES

1948-49

Drive-In Theatres of the United States

Latest Available Data on Location, Ownership, Car Capacity, and Operating Policy Disclosed by Survey

After several years of continued growth, drive-in theatres have emerged as an important, separate segment of the theatre industry. As a result, it has now become possible, and necessary, to accumulate definite industry statistics and records that will enable a correct evaluation of their individual drawing areas, their motion picture requirements, and their future growth. The accompanying survey drawn from a questionnaire conducted by the able Research Department of the Motion Picture Association of America formalizes for the first time much helpful data. This is a start. Continuing work of refinement and research will produce the maximum accuracy in future reprints.

In earlier issues of THEATRE CATALOG, the total number of open and operating drive-in theatres in the United States has been variously estimated up to a maximum of about 300 at the end of 1947. Predominantly this number resulted from an inspection of different companies' files and records without the facilities for cross checking and pin pointing for complete accuracy.

It was a known fact that due to war time and immediate post-war restrictions on new construction and due to the high prices of all structural materials, many of these were small and relatively makeshift efforts. The in-car speaker and the important confection vending had created wide interest and made development possible, but actual progress was slow. Not until the fall of 1947 and the spring of 1948 did the real growth materialize. During this period more and larger drive-in enterprises were completed and opened than previously existed. Some were deluxe operations costing $350,000.00 to $400,000.00 for 700 to 800 car capacities; and a few dual or twin theatres offered accommodations to as many as 2000 cars.

Better film supplies and earlier runs were solicited from the film distributors, backed by offers of high dollar and percentage rentals to the place where the industry as a whole realized that here was a husky, new, permanent facet of its entertainment outlet, —and not just a passing and not very reputable fad.

Probably the equipment manufacturing fraternity was the first division of the industry to recognize the amazing growth of drive-in theatres; and to do something about it. Larger and heavier mechanisms, light sources and means of power supply were adopted or specially designed for their extreme needs. Underground cables were found and recommended; engineering services were offered; and much research was accomplished in the fields of cash control, screen towers, traffic control, lighting, confection vending, sound and fencing. All of this has resulted in making 1948 one of the best equipment sales years on record.

To satisfy membership inquiry, the important Motion Picture Association of America (better known as the "Johnston Office") during the months of July and August, 1948, launched, through their Research Department, a detailed statistical survey of the drive-in theatres then operating and in the aborning stage. Questionnaires were forwarded to the territorial offices of their seven distributor members and on the basis of general trade knowledge or actual interviews with owners, data was accumulated from each of the distribution areas. Carefully compiled and published to a selected trade list in September, 1948, a supplement was issued in October, 1948, and continuing periodic attention is planned.

Because the growth of drive-in theatre operation is continuing at the same accelerated pace in every nook and cranny of the country; and because exhibition policies and even car capacities and ownership are not static; much of the data here published may not be completely accurate and current for any great period of time. However, as the start, and as the first formalized knowledge of any kind, it has merit.

The data as to "number of months open a year" has been recorded, as shown on questionnaires, except that fractions of months have been raised to the next whole number. "Program policy" and "number of changes weekly" refer to the usual policy understood to be followed by each theatre at that time. Naturally, neither the Motion Picture Association, nor THEATRE CATALOG, in publishing this information accepts responsibility for, or warrants the accuracy of the data following. It is published as a guide only.

Number and Car Capacity of OPEN AND CLOSED Drive-In Theatres in the United States, by Exchange Territory

Territory	Number of Theatres			Car Capacity		
	Open	Closed*	Total	Open	Closed*	Total
Albany	17	..	17	6,525	..	6,525
Atlanta	50	1	51	18,498	150	18,648
Boston	24	5	29	9,900	825	10,725
Buffalo	16	1	17	8,241	500	8,741
Charlotte	107	1	108	23,444	200	23,644
Chicago	15	..	15	11,930	..	11,930
Cincinnati	53	2	55	22,226	350	22,576
Cleveland	51	..	51	20,505	..	20,505
Dallas	79	..	79	29,020	..	29,020
Denver	7	1	8	3,725	100	3,825
Des Moines	5	..	5	3,024	..	3,024
Detroit	28	..	28	13,755	..	13,755
Indianapolis	34	..	34	14,250	..	14,250
Kansas City	19	..	19	10,500	..	10,500
Los Angeles	19	2	21	12,056	1,050	13,106
Memphis	10	..	10	4,053	..	4,053
Milwaukee	2	..	2	1,554	..	1,554
Minneapolis	4	..	4	1,850	..	1,850
New Haven	5	..	5	2,150	..	2,150
New Orleans	16	..	16	6,129	..	6,129
New York	10	..	10	6,650	..	6,650
Oklahoma City	16	..	16	8,794	..	8,794
Omaha	3	..	3	1,850	..	1,850
Philadelphia	12	..	12	5,344	.	5,344
Pittsburgh	39	..	39	16,494	..	16,494
Portland	5	..	5	2,800	..	2,800
St. Louis	12	..	12	4,940	..	4,940
Salt Lake City	26	..	26	11,179	..	11,179
San Francisco	21	..	21	11,791	..	11,791
Seattle	15	..	15	7,400	.	7,400
Washington	28	..	28	11,626	..	11,626
Total	748	13	761	311,203	3,175	314,378

* Only 13 with a total capacity of 3175 (an average of 244 cars) are reported as having closed.

A LISTING BY EXCHANGE TERRITORY

NOTE: For simplification each theatre is listed separately and data regarding it has been reduced to a set of symbols. M-indicates the number of months it is in operation; C-indicates its car capacity; D-indicates the number of days per week it operates; SF,-DF,-or ASDF-indicates whether it observes a single feature, double feature, or an assorted single and double policy; and CH-indicates the number of changes of show per week.
As an example: (M8-C175-D7-SF-CH4) signalizes a theatre that operates eight months out of the year; that contains ramp capacity for 175 cars; that operates seven days per week; with a single feature policy; and changes its attraction four times per week.
Should a theatre be operated by interests which control four or more theatres, either regular or drive-in, under the same management, — a symbol corresponding to that shown in the list of circuits will follow the executive name.
Where any data is not yet recorded or available, an (*) is substituted.

ALBANY TERRITORY
New York

Canton, N. Y. SUNSET DR., Ogdensburg Rd., Route 68. Exec: D. Gilson. (M6-C200-D7-DF-CH3).

Colonie, N. Y. MOHAWK DR., Schenectady-Albany Rd. Exec: (FABH) Neil Hellman, Mohawk Theatre Corp. (M6-C900-D7-ASDF-CH2).

Colonie, N. Y. SARATOGA DR., Saratoga Rd. Exec: (FABH) Neil Hellman, Mohawk Theatre Corp. (M6-C700-D7-ASDF-CH2).

East Greenbush, N. Y. AUTO VISION, Routes 20 and 9, Exec: Dave Willig. (M6-C300-D7-DF-CH3).

Hoosick Falls, N. Y. HOOSICK FALLS DR., Route 22. Exec: H. Hathaway, Hoosick Drive-In. (M6-C300-D7-DF-CH3).

Hudson, N. Y. HUDSON DR., Route 9. Exec: (BRAN) Harry Brandt, Brandt Circuit. (M4-C400-D7-DF-CH3).

Lake George, N. Y. LAKE GEORGE DR., Route 9. Exec: (LAMO) Harry Lamont, Outdoor Theatres, Inc. (M6-C250-D7-DF-CH3).

Leeds, N. Y. LEEDS DR., Route 23. Exec: (LAMO) Harry Lamont, Lamont Theatres. (M6-C150-D7-ASDF-CH3).

Malone, N. Y. FRANKLIN DR., Route 11. Exec: H. Shaw. (M6-C250-D7-DF-CH3).

Massena, N. Y. SUNSET DR., Route 37. Exec: D. Gilson. (M6-C250-D7-DF-CH3).

Ogdensburg, N. Y. RIVERSIDE DR., Route 37. Exec: J. F. Free. (M6-C250-D7-DF-CH3).

Plattsburgh, N. Y. DRIVE-IN, Route 3. Exec: B. H. Hobbs. (M5-C300-D7-ASDF-CH3).

Potsdam, N. Y. MOONLITE DR., Norwood Rd., Route 56. Exec: (PAPP) A. Pappayanakos, Pappayanakos Brothers. (M6-C500-D7-DF-CH3).

S. Glens Falls, N. Y. AUSTS DR., Route 9. Exec: Wm. H. Aust, Austs Drive-In. (M6-C300-D7-DF-CH3).

Utica, N. Y. KALLET DR., Utica-Rome Rd. Exec: (KALL) M. Kallet, Kallet Circuit. (M6-C900-D7-ASDF-CH2).

Vails Mills, N. Y. VAILS MILLS DR., Route 30. Exec: (LAMO) Harry Lamont, Tri City Drive-In. (M6-C400-D7-DF-CH3).

Watertown, N. Y. STARLITE DR., Adams-Watertown Rd., Route 11. Exec: R. Cantor, Watertown Drive-In, Inc. (M6-C275-D7-DF-CH3).

ATLANTA TERRITORY
Alabama

Auburn, Ala. AUBURN OPELIKA DR., Highway 19. Exec: John Gazes and Louis Soult. (M12-C320-D7-SF-CH4).

Bessemer, Ala. AUTO MOVIES, Bessemer Highway. Exec: J. C. Worthington, Auto Movie Amusement Co. (M12-C275-D7-SF-CH4).

Birmingham, Ala. ROEBUCK DR., Highway 11. Exec: (WATER) N. H. Waters, Drive-In Theatre of Alabama, Inc. (M12-C500-D7-SF-CH4).

Birmingham, Ala. SHADES MOUNTAIN DR., Highway 31. Exec: (WATER) N. H. Waters, Shades Mountain Drive-In Theatre Co., Inc. (M12-C500-D7-SF-CH4).

Gadsden, Ala. DRIVE-IN, Anniston Highway. Exec: B. W. Wright. (M12-C422-D7-SF-CH4).

Manchester, Ala. DRIVE-IN, Highway 5. Exec: C. E. Crouch. (M12-C200-D6-SF-CH3).

Montgomery, Ala. DRIVE-IN, Highway 31. Exec: R. J. Barnes, B. F. and I. Amusement Co. (M12-C350-D7-SF-CH4).

Muscle Shoals, Ala. TRI-CITIES DR., Second Street and Baker Highway. Exec: A. D. Thompson and J. O. Hannah. (M12-C250-D7-SF-CH4).

Number and Car Capacity of CIRCUIT AND NON-CIRCUIT Drive-In Theatres in the United States, by Exchange Territory

(NOTE: A circuit is defined as "four or more" theatres (not limited to drive-ins) operated by the same management.)

	Number of Theatres			*Car Capacity*		
Territory	*Ct.*	*Non-Ct.*	*Total*	*Ct.*	*Non-Ct.*	*Total*
Albany	8	9	17	4,100	2,425	6,525
Atlanta	15	36	51	6,784	11,864	18,648
Boston	9	20	29	4,475	6,250	10,725
Buffalo	4	13	17	2,250	6,491	8,741
Charlotte	6	102	108	2,500	21,144	23,644
Chicago	4	11	15	2,900	9,030	11,930
Cincinnati	7	48	55	3,284	19,292	22,576
Cleveland	15	36	51	6,875	13,630	20,505
Dallas	36	43	79	13,805	14,215	28,020
Denver	..	8	8	..	3,825	3,825
Des Moines ..	1	4	5	700	2,324	3,024
Detroit	8	20	28	3,800	9,955	13,755
Indianapolis ..	19	15	34	8,150	6,100	14,250
Kansas City ..	8	11	19	5,200	5,300	10,500
Los Angeles ..	14	7	21	9,106	4,000	13,106
Memphis	5	5	10	2,530	1,523	4,053
Milwaukee ...	2	..	2	1,554	..	1,554
Minneapolis ..	..	4	4	..	1,850	1,850
New Haven...	2	3	5	1,000	1,150	2,150
New Orleans .	9	7	16	4,428	1,701	6,129
New York ...	8	2	10	5,350	1,300	6,650
Oklahoma City	9	7	16	5,602	3,192	8,794
Omaha	2	1	3	1,250	600	1,850
Philadelphia ..	2	10	12	1,654	3,690	5,344
Pittsburgh ...	4	35	39	2,382	14,112	16,494
Portland	..3	2	5	2,000	800	2,800
St. Louis	7	5	12	2,648	2,292	4,940
Salt Lake City	4	22	26	2,295	8,884	11,179
San Francisco	14	7	21	8,093	3,698	11,791
Seattle	11	4	15	5,400	2,000	7,400
Washington ..	7	21	28	4,740	6,886	11,626
Total	243	518	761	124,855	189,523	314,378

THEATRE CIRCUITS that are Interested in Drive-In Theatres in the United States

NOTE: Theatre interests who are active in the management of four or more theatres, either regular or drive-in, are considered in this tabulation as Theatre Circuits. The symbol opposite each is carried as an identification in the accompanying detailed individual list of theatres.

Ct. Symbol	*Ct. Name and Address*
ACAD	— ACADEMY THEATRES, 328 E. Town St., Columbus 15, Ohio.
AFFI	— AFFILIATED THEATRE SERVICE, INC., 1069 Market St., San Francisco, California.
ALLI	— ALLIANCE THEATRE CORP., 231 South LaSalle St., Chicago, Illinois.
ANDE	— ANDY ANDERSON, Kentucky Theatre, Hartford, Kentucky.
ASHM	— ASHMUN BROS. THEATRES, Strand Theatre Bldg., Caro, Michigan.
ASSO	— ASSOCIATED AMUSEMENT CO., 131 South 2nd St., E., Salt Lake City, Utah.
B&L	— B & L ENTERPRISES, Builders Bldg., Charlotte, N. C.
BART	— LEWIS BARTON THEATRES, Redskin Theatre, Oklahoma City, Oklahoma.
BENJ	— ROY BENJAMIN, Florida Theatre Bldg., Jacksonville, Florida.
BLAN	— BLANKENSHIP THEATRES, 2708 Ave. "V", Lubbock, Texas.
BLATT	— BLATT BROS. THEATRES, 1701 Boulevard of the Allies, Pittsburgh 19, Pennsylvania.
BLUM	— BLUMENFELD THEATRES, 70 Eddy St., San Francisco 2, California.
BRAN	— BRANDT THEATRES, 1555 Broadway, New York 19, N. Y.
CALIF	— CALIFORNIA DRIVE-IN THEATRES, INC., 12109 W. Olympic Blvd., Los Angeles 25, California.
CAMP	—EDWARD CAMPBELL, 604 W. Walnut St., Louisville, Ky.
COMM	— COMMONWEALTH THEATRES, INC., 215 W. 18th St., Kansas City 8, Missouri.
CRES	— CRESCENT AMUSEMENT CO., 147 Fifth Ave., N., Nashville 3, Tennessee.
DICK	— DICKINSON OPERATING CO., INC., 5903 Woodson Road, Mission, Kansas.
DIXIE	— DIXIE DRIVE-IN THEATRES, 602 Walton Bldg., Atlanta 3, Georgia.
DRTC	— DRIVE-IN THEATRES CORP., 703 Bridge St., N. Weymouth, Massachusetts.
DRTM	— DRIVE-IN THEATRE MANAGEMENT CORP., Leader Bldg., Cleveland, Ohio.
DURK	— F. H. DURKEE ENTERPRISES, 5436 Hartford Road, Baltimore, Maryland.
EAPT	— EAST POINT AMUSEMENT COMPANY, Fairfax Theatre Bldg., East Point, Georgia.
ETRN	— EASTERN DRIVE-IN CORP., 341 W. 44th St., New York 18. N. Y.
ESSA	— ESSANESS THEATRES CORP., 540 N. Michigan Ave., Chicago, Illinois.
EVER	— EVERETT ENTERPRISES, 223 S. Church St., Charlotte, N. C.
FAB	— FABIAN THEATRES CORP., 1501 Broadway, New York 18, N. Y.
FABH	— FABIAN-HELLMAN THEATRES, INC., 378 Clinton Ave., Albany 5, New York.
FILM	— FILM SERVICE CORP., 218 S. Liberty St., New Orleans 13, Louisiana.
FIRST	— FIRST NATIONAL THEATRES, INC., 314 E. Yakima Ave., Yakima, Washington.
FLEX	— FLEXER THEATRES, INC., 1705 Poplar Ave., Memphis, Tennessee.
FLA	— FLORIDA STATE THEATRES, INC., Florida Theatre Bldg., Jacksonville, Florida.
FOX	— BILLY FOX THEATRE ENTERPRISES, Fox Theatre, Lecompte, Louisiana.
FREL	— FRELS' THEATRES, 113 W. Constitution St., Victoria, Texas.
GATR	— GEORGIA THEATRE COMPANY, 660 Peachtree St., Atlanta, Georgia.
GLENN	— FRANK GLENN CIRCUIT, Tamoroa, Illinois.
GOLD	— GOLDEN STATE THEATRES & REALTY CORP., 995 Market St., San Francisco, California.
GRIE	— GRIEME AND FASKEN THEATRES, Vitaphone Theatre, Wenatchee, Washington.
GRIF	— GRIFFITH THEATRES, 11½ N. Lee Ave., Oklahoma City, Oklahoma.
HAVO	— HARRIS-VOELLER THEATRES, INC., Burley Theatre, Burley, Idaho.
HIGG	— HIGGINS AMUSEMENT CO., 2420 - 2nd Ave., Seattle 1, Washington.
HUDS	— HUDSON THEATRES CO., Tivoli Theatre Bldg., Main St., Richmond, Indiana.
INTE	— INTERSTATE ENTERPRISES, Rose Theatre Bldg., Thomasville, Georgia.

(Continued on Next Page)

Florida

Bradenton, Fla. DRIVE-IN, 5 miles from Downtown. Exec: Charles Hanson. (M12-C219-D7-SF-CH4).

Clearwater, Fla. OUTDOOR DR., Highway 19. Exec: Owen M. Philpott. (M12-C250-D7-SF-CH4).

Daytona Beach, Fla. DRIVE-IN, Deland Road. Exec: R. E. Beck, Coastal Drive-Ins. (M12-C375-D7-SF-CH3).

Ft. Lauderdale, Fla. DRIVE-IN, West Broward Blvd. at Wingate Rd. Exec: Phil C. Mathews, Mathews and Branford. (M12-C500-D7-SF-CH3).

Hallandale, Fla. DRIVE-IN, Highway 1. Exec: Walter Colby, Hallandale Drive-In, Inc. (M12-C500-D7-ASDF-CH3).

Jacksonville, Fla. DRIVE-IN, Beach Rd. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres. (M12-C361-D7-ASDF-CH3).

Jacksonville, Fla. SKYVIEW DR., 1887 Kings Rd. Exec: (BENJ) Roy Benjamin. (M12-C375-D7-DF-CH3).

Lakeland, Fla. SILVERMOON DR., Highway 92. Exec: I. Q. Mize. (M12-C400-D7-SF-CH3).

Miami, Fla. MIAMI DR., N. W. 7th Ave. at 81st Street. Exec: (LOEW) E. M. Loew, Miami Drive-In Theatre, Inc. (M12-C1000-D7-SF-CH2).

Ocala, Fla. DRIVE-IN, Route 441. Exec: Ira B. Dyer. (M12-C550-D7-SF-CH3).

Orlando, Fla. DRIVE-IN, Orange Blossom Trail. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres. (M12-C298-D7-ASDF-CH3).

Panama City, Fla. DRIVE-IN, N. W. 15th St. Exec: Bud Davis. (M12-C355-D7-SF-CH4).

St. Petersburg, Fla. DRIVE-IN, 4th St. and 72nd Ave. Exec: (FLA) Frank Rogers, Florida Theatres, Inc. (M12-C400-D7-ASDF-CH4).

Tallahassee, Fla. CAPITOL DR., Apalachicola Highway. Exec: Frank E. Lewis. (M12-C348-D7-SF-CH4).

Tampa, Fla. AUTO PARK, Beachcomber Rd. Exec: S. E. Britton. (M12-C500-D7-SF-CH4).

Tampa, Fla. DRIVE-IN, East Sixth St. Exec: (FLA) Frank Rogers, Florida Theatres, Inc. (M12-C400-D7-ASDF-CH4).

Tampa, Fla. SKY WAY DR., North Florida Ave. Exec: Troy Martin. (M12-C250-D7-ASDF-CH3).

W. Palm Beach, Fla. DRIVE-IN, Highway 80. Exec: C. M. Hall. (M12-C500-D7-SF-CH4).

Winter Haven, Fla. OUTDOOR DR., Highway 17. Exec: Owen M. Philpott. (M12-C300-D7-ASDF-CH4).

Georgia

Atlanta, Ga. PIEDMONT DR., Piedmont Rd. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres.
(M12-C650-D7-SF-CH3).

Atlanta, Ga. STEWART DR., Stewart Ave. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres.
(M12-C650-D7-SF-CH3).

Augusta, Ga. DRIVE-IN, Sandbar Ferry Rd. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres.
(M12-C315-D7-ASDF-CH3).

Columbus, Ga. DRIVE-IN, Fort Benning Rd. Exec: F. S. Shingler.
(M12-C300-D7-SF-CH3).

Columbus, Ga. REX VIEW DR., 24th St. and River Rd. Exec: (GATR) William K. Jenkins, Georgia Theatre Co.
(M12-C450-D7-SF-CH4).

Dalton, Ga. CALHOUN DR. Exec: W. E. Fischer. (M12-C300-D6-SF-CH4).

Gainesville, Ga. OUTDOOR DR., Highway 19. Exec: R. H. Head.
(M12-C200-D7-SF-CH4).

Griffin, Ga. GETZEN DR., North Hill Street Extension. Exec: R. W. Getzen.
(M12-C250-D6-SF-CH3).

Macon, Ga. DRIVE-IN, Old Jefferson Rd. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres.
(M12-C327-D7-ASDF-CH3).

Moultrie, Ga. DRIVE-IN, Quitman Rd. Exec: R. T. Moody.
(M12-C200-D7-SF-CH4).

Putney, Ga. SOWEGA AUTO, Camilla Highway. Exec: M. C. Dunford.
(M12-C350-D7-SF-CH3).

Savannah, Ga. DRIVE-IN, Victory Drive. Exec: (DIXIE) Harris Robinson, Dixie Drive-In Theatres.
(M12-C234-D7-ASDF-CH3).

Thomasville, Ga. DRIVE-IN, Highway 19. Exec: W. C. Matthews, Sabon Amusement Co. (C150-CLOSED).

Thomasville, Ga. HI-WAY, Thomasville-Tallahassee Highway. Exec: (INTE) Nat M. Williams, Interstate Enterprises.
(M12-C324-D6-SF-CH3.)

Vidalia, Ga. DAVIS DR., Lyon Rd. Exec: S. B. Davis.
(M12-C350-D7-SF-CH4).

Tennessee

Alcoa, Tenn. LAKEMONT DR., Highway 129. Exec: Juanita Pemberton, Faree, Pemberton, Milligan.
(M12-C250-D7-SF-CH4).

Chattanooga, Tenn. SKYWAY DR., Brainerd Rd. Exec: Don Shaw, Skyway Theatre, Inc.
(M12-C400-D7-ASDF-CH3).

Cookeville, Tenn. DRIVE-IN, Highway 70N. Exec: Benton Yound.
(M12-C200-D6-SF-CH3).

INTT — INTERSTATE THEATRES CORP., Metropolitan Bldg., Tremont St., Boston, Massachusetts.
JEFF — JEFFERSON AMUSEMENT CO. & EAST TEXAS THEATRES, INC., Jefferson Theatre Bldg., Beaumont, Texas.
JOHN — JOHNSON & SPRACHER, 207 Sherwood Bldg., Spokane, Washington.
JOS — EDDIE JOSEPHS THEATRES, INC., 222 E. 6th St., Austin, Texas.
KAIM — KAIMANN THEATRES, INC., 4102a W. Florissant Ave., St. Louis 15, Missouri.
KALL — KALLET THEATRES, INC., 147 Madison St., Oneida, N. Y.
KAYT — KAYTON CIRCUIT, Montgomery, West Virginia.
KERA — KERASOTES THEATRES, 104 N. 6th St., Springfield, Illinois.
LAM — LAM AMUSEMENT CO., Broad St., Rome, Georgia.
LAMO — LAMONT THEATRE SERVICE, 93 State St., Albany 7, N. Y.
LAVE — WILLIAM J. LAVERY THEATRES, Lafayette Theatre Bldg., Haverhill, Massachusetts.
LEON — LEON THEATRES, 2011½ Jackson St., Dallas, Texas.
LIB — LIBERTY THEATRE CORP., Liberty Theatre, Lewiston, Idaho.
LOEW — E. M. LOEW'S THEATRES, Metropolitan Theatre Bldg., Boston 16, Massachusetts.
LONE — LONE STAR AMUSEMENT CO., Texas Drive-In, Corpus Christi, Texas.
LUST — SIDNEY LUST THEATRES, #1 Thomas Circle, N. W., Washington, D. C.
MALC — MALCO THEATRES, INC., 89 Beale St., Memphis, Tennessee.
MANTA — MANTA & ROSE, 600 S. Michigan Ave., Chicago, Illinois.
MATS — MATSON THEATRES, Dixie Theatre, Rockdale, Texas.
MEEK — GUY W. MEEK THEATRES, Route #6, Box 479-D, San Jose, California.
MIDENT — MIDWAY ENTERPRISES, INC., 3901 Midway Drive, San Diego, California.
MIDWST — MIDWEST DRIVE-IN THEATRES, INC., 359 Boylston St., Boston, Massachusetts.
NIL — CARL NILMAN THEATRES, Shelburne Falls, Massachusetts.
OCHA — ALBERT W. OCHS, 3600 Ridge Ave., Cleveland 2, Ohio.
OCHH — HERBERT OCHS CIRCUIT, 11871 Lake Ave., Cleveland, Ohio.
PAPP — PAPPAYANAKOS BROTHERS, Canton, New York.
PANA — PARAMOUNT-NACE THEATRES, INC. and HARRY L. NACE, 208 Orpheum Theatre Bldg., Phoenix, Arizona.
PARI — PARAMOUNT-RICHARDS THEATRES, INC., 608 Canal St., New Orleans, Louisiana.
PUBL — PUBLIX GREAT STATES THEATRES, INC., 175 N. State St., Chicago 1, Illinois.
READE — WALTER READE THEATRES, 701 Seventh Ave., New York 19, N. Y.
ROBB — ROBB AND ROWLEY UNITED, INC., 314 S. Harwood St., Dallas, Texas.
SERO — S. E. R. O. ENTERPRISES, 140 Fairfax Blvd., Los Angeles, California.
SCHW — CARL H. SCHWYN THEATRES, INC., Box 220, Bowling Green, Ohio.
SEITZ — SEITZ AMUSEMENT CO., 107 Columbus Ave., Sandusky, Ohio.
SHUL — SHULMAN & SCHWARTZ, 1779 E. 55th St., Cleveland, Ohio.
SILAY — ALEX SILAY THEATRES, Box #99. Daisytown. Pa.
SKIR — SKIRBALL BROS., 808 Keith Bldg., Cleveland, Ohio.
SLOT — SLOTNICK AND CANTER, 215 Crawford Ave., Syracuse, New York.
SNOQ — SNOQUALIMIE VALLEY THEATRES, North Bend, Washington.
STAN — STANDARD THEATRES MANAGEMENT, 212 W. Wisconsin Ave., Milwaukee 3, Wisconsin.
SULL — O. F. SULLIVAN THEATRES, 725 W. Douglas Ave., Wichita 12, Kansas.
TEXAS — TEXAS CONSOLIDATED THEATRES, INC., Majestic Theatre Bldg., Dallas 1, Texas.
THRS — THEATRES SERVICE CO., 629 Common St., New Orleans, Louisiana.
TRI — TRI-STATES THEATRE CORP., 800 Paramount Bldg., Des Moines, Iowa.
UNDER — UNDERWOOD & EZELL, 2031 Jackson St., Dallas 1, Texas.
UNITE — UNITED THEATRES, INC., 1814 Smith Tower Bldg., Seattle 1, Washington.
VICT — VICTORIA AMUSEMENT CO., 4605 Westfield Ave., Pennsauken, New Jersey.
WADE — L. M. WADE THEATRES, Fuquay Springs, North Carolina.
WATER — WATERS THEATRE CO., 2109 Fifth Ave., N., Birmingham 3, Alabama.
WEHR — FRED WEHRENBERG CIRCUIT, 2735 Cherokee St., St. Louis 18, Missouri.
WELL — PETER M. WELLMAN CIRCUIT, Wellman Theatre, Girard, Ohio.
WEST — WESTLAND THEATRES, INC., 291 Golden Gate Ave., San Francisco 2, California.
WILBK — WILBY-KINCEY SERVICE CORP., 154 Walton St., N.W., Atlanta, Georgia.
WILD — WILDER THEATRES, 1503 Colley Ave., Norfolk, Virginia.

Fountain City, Tenn. SKYWAY DR., 6222 Broadway. Exec: G. D. Baker. (M12-C450-D6-SF-CH3).

Johnson City, Tenn. TRI-CITIES DR., Johnson City-Bristol Highway. Exec: Bernie Wylie. (M12-C300-D7-ASDF-CH3).

Knoxville, Tenn. DRIVE-IN, 3546 Kingston Pike. Exec: R. J. Barnes, Drive-In Theatre Operators, Inc. (M12-C511-D7-SF-CH3).

Morristown, Tenn. DRIVE-IN, One mile from Downtown. Exec: G. D. Biker. (M12-C189-D6-SF-CH3).

Oak Ridge, Tenn. SKYWAY DR., Oak Ridge Turnpike. Exec: W. J. Hatfield. (M9-C300-D7-ASDF-CH4).

Sparta, Tenn. PARK-A-WAY DR., Sparta-Cookeville Highway. Exec: Jack Mitchell. (M12-C300-D7-SF-CH4).

BOSTON TERRITORY

Maine

Ellsworth Falls, Me. DRIVE-IN, Route 1 (Portable). Exec: R. L. Whitton. (M3-C20-D7-SF-CH3).

Naples, Me. DRIVE-IN, Route 3 (Portable). Exec: Mr. Stone. (M3-C20-D7-SF-CH3).

Saco, Me. SACO AUTO, Route 1. Exec: Eugene Boragine, Saco Auto Theatre, Inc. (M5-C300-D7-SF-CH3).

Massachusetts

Agawam, Mass. RIVERSIDE PARK-IN, Route 5A. Exec: Edward Carroll, Riverside Park-In. (M7-C400-D7-DF-CH2).

Bellingham, Mass. AUTO PARK, Woonsocket-Franklin Rd. Exec: Fred Parker. (M6-C200-D7-DF-CH2).

Dalton, Mass. BRIGGS OPEN AIR, Route 9. Exec: Alfred Boryta, Briggs Open Air Theatres, Inc. (M6-C400-D7-DF-CH3).

Dartmouth, Mass. DARTMOUTH AUTO, Route 6. Exec: (INTT) E. Harold Stoneman, Dartmouth Auto Theatre Co. (M8-C500-D7-DF-CH2).

Haverhill, Mass. RIVERVIEW DR., River Road. Exec: Rose Chilpyian, Riverview Drive-In Co. (M5-C375-D7-DF-CH2).

Lynn, Mass. LYNN OPEN AIR, Route 1A. Exec: (LOEW) E. M. Loew, E. M. Loew Theatres. (M7-C500-D7-DF-CH2).

Mendon, Mass. DRIVE-IN, Mendon-Millville Rd. Exec: Fred Parker. (M6-C100-D7-DF-CH2).

Metheun, Mass. MERRIMAC PARK DR., Merrimac Park. Exec: (LOEW) E. M. Loew, E. M. Loew Theatres. (M7-C325-D7-DF-CH2).

North Wilbraham, Mass. PARKWAY DR., Boston Rd. Exec: David Willig, Parkway Theatres, Inc. (M7-C750-D7-DF-CH3).

Raynham, Mass. DRIVE-IN, Route 128. Exec: (DRTC) J. Guarino, Drive-In Theatre Corp. (M6-C600-D7-ASDF-CH2).

Revere, Mass. REVERE DR., Revere Blvd. Exec: Mickail Redstone, Revere Drive-In. (C400-CLOSED).

Salisbury, Mass. SALISBURY AUTO, Beach Rd. Exec: (LAVE) William Lavery, William J. Lavery Theatres. (M8-C400-D7-DF-CH2).

Saugus, Mass. SAUGUS DR., Route 1. Exec: (DRTC) J. Guarino, Drive-In Theatre Corp. (M7-C400-D7-DF-CH2).

Seekonk, Mass. BAY STATE DR., Route 6. Exec: Romano Brothers, Bay State Drive-In Corp. (M8-C500-D7-DF-CH2).

Shrewsbury, Mass. OPEN AIR AUTO, Route 9. Exec: (DRTC) Thomas De Maura, Drive-In Theatre Corp. of Boston. (M7-C550-D7-DF-CH2).

Sturbridge, Mass. RIDE-IN. (C100-CLOSED).

Sutton, Mass. MOTOR-IN, Providence Rd. Exec: Wilfred Bernard, Motor-In, Inc. (M7-C500-D7-DF-CH3).

W. Pittsfield, Mass. BERKSHIRE DR., 1501 W. Housatonic St. Exec: Harry Lazarus, Berkshire Drive-In Theatre, Inc. (M6-C600-D7-DF-CH3).

*Is substituted whenever any data is not yet recorded or available.

OPERATING POLICY of Open Drive-In Theatres in the United States, by Exchange Territory

(NOTE: SF=Single Feature; DF=Double Feature; and ASDF=Alternating Double and Single.)

Territory	Total Open Operation			Days Weekly			Program Policy			Weekly Program Changes				
		Year-Around	Seasonal	7	6	*Less	SF	DF	ASDF	1	2	3	4	5 or More
Albany	17	..	17	17	..	..	..	12	5	..	3	14	..	..
Atlanta	50	49	1	43	7	..	36	1	13	..	1	25	24	..
Boston	24	..	24	24	..	..	3	18	3	..	14	10	..	..
Buffalo	16	..	16	16	..	..	5	2	9	..	1	12	3	..
Charlotte	107	3	104	61	45	1	98	..	9	..	..	15	71	21
Chicago	15	..	15	14	1	..	14	..	1	4	2	8	1	..
Cincinnati	53	..	53	53	..	..	25	7	21	..	..	7	40	6
Cleveland	51	..	51	50	..	1	12	7	32	1	2	39	9	..
Dallas	79	32	47	78	1	..	50	..	29	..	..	14	64	1
Denver	7	..	7	7	..	..	1	4	2	..	..	7	..	..
Des Moines	5	..	5	5	..	..	5	..	..	..	..	5	..	..
Detroit	28	..	28	28	..	..	..	..	28	..	..	28	..	..
Indianapolis	34	..	34	34	..	..	18	3	13	..	..	23	7	4
Kansas City	19	..	19	19	..	..	1	1	17	..	..	19	..	..
Los Angeles	19	19	..	19	..	..	..	19	..	2	4	13	..	..
Memphis	10	..	10	10	..	..	4	1	5	..	..	5	4	1
Milwaukee	2	..	2	2	..	..	1	..	1	..	1	1	..	..
Minneapolis	4	..	4	4	..	..	4	..	..	..	..	1	3	..
New Haven	5	..	5	5	..	..	..	5	..	..	3	2	..	..
New Orleans	16	10	6	12	3	1	13	..	3	1	..	2	13	..
New York	10	..	10	10	..	..	2	4	4	..	1	8	1	...
Oklahoma City	16	..	16	16	..	..	14	1	1	..	..	14	2	..
Omaha	3	..	3	3	..	..	3	..	..	..	..	3	..	..
Philadelphia	12	..	12	10	2	..	10	..	2	..	..	4	8	..
Pittsburgh	39	..	39	35	4	..	8	..	31	..	..	8	30	1
Portland	5	5	..	5	..	..	1	..	4	..	..	5	..	..
St. Louis	12	..	12	11	1	..	11	..	1	..	1	10	1	..
Salt Lake City	26	..	26	26	..	..	11	1	14	..	..	16	10	..
San Francisco	21	17	4	21	..	..	..	8	13	..	..	18	3	..
Seattle	15	2	13	15	..	..	..	..	15	..	..	15	..	..
Washington	28	..	28	28	..	..	11	3	14	..	2	3	15	8
Total	748	137	611	681	64	3	361	97	290	8	35	354	309	42

* *Of all of these theatres, NONE were open 5 days, ONE in the Charlotte territory was open 4 days, and TWO, in Cleveland and New Orleans respectively, were open 3 days or less.*

West Brookfield, Mass. WESTWIND DR., West Main Street. Exec: James McGovern, Westwind Drive-In.
(C125-CLOSED).

Westfield, Mass. SUNDOWN AUTO, Route 202. Exec: Owen Holmes, Sundown Auto Theatre, Inc.
(M7-C660-D7-DF-CH3).

Weymouth, Mass. DRIVE-IN, Route 3A. Exec: (DRTC) J. Guarino, Drive-In Theatre Corp. (M6-C600-D7-ASDF-CH2).

New Hampshire

Manchester, N. H. PINE ISLAND PARK DR., Routes 3A and 18. Exec: J. Sayer. (M3-C300-D7-DF-CH3).

Merrimac, N. H. DANIEL WEBSTER.
(C100-CLOSED).

Sunapee, N. H. DRIVE-IN. Exec: John and Edward Wentrowski.
(C100-CLOSED).

Rhode Island

Providence, R. I. PROVIDENCE DR., Route 1. Exec: (LOEW) E. M. Loew, E. M. Loew Theatres.
(M9-C600-D7-DF-CH2).

Vermont

Burlington, Vt. SUNSET DR., Route 127. Exec: John Gardner, Sunset Amusement Corp. (M5-C300-D7-ASDF-CH3).

BUFFALO TERRITORY
New York

Athol Springs, N. Y. SKYWAY DR., Route 5. Exec: William Brett, Skyway Drive-In Theatre of New York, Inc.
(M7-C600-D7-ASDF-CH3).

Aurelius, N. Y. FINGER LAKES DR., Route 5. Exec: Don Wilson, Finger Lakes, Inc. (M7-C290-D7-DF-CH4).

Bemus Point, N. Y. CHAUTAUQUA DR., Route 17. Exec: M. C. Bickel.
(M7-C250-D7-SF-CH3).

Big Flats, N. Y. ELMIRA DR., Route 17E. Exec: Benjamin M. Berinstein, Harry L. Berinstein, Elmira Drive-In Corp.
(C500-CLOSED).

Binghamton, N. Y. TRI-CITY DR., George F. Highway. Exec: (FABH) Neil Hellman, Tri-City Amusement Co., Inc.
(M7-C600-D7-DF-CH2).

Blasdell, N. Y. STAR DR., Lake Avenue. Exec: Mrs. A. Schick, Blasdell Star Drive-In Theatre, Inc.
(M7-C320-D7-ASDF-CH4).

Camillus, N. Y. KALLET DR., Route 5. Exec: (KALL) Sidney Kallet, Kallet Theatres, Inc.
(M6-C800-D7-ASDF-CH3).

Canandaigua, N. Y. PARKWAY DR., Route 5. Exec: (SLOT) S. P. Slotnick, Slotnick-Gandel, Inc.
(M7-C400-D7-ASDF-CH4).

Cheektowaga, N. Y. BUFFALO DR., Harlem Rd. Exec: James Kelly, National Drive-In Theatres.
(M7-C650-D7-SF-CH3).

Chili, N. Y. ROCHESTER DR., Chili Rd. Exec: James Kelly, National Drive-In Theatres. (M7-C726-D7-SF-CH3).

Gasport, N. Y. LOCKPORT DR., Route 31. Exec: Walter Dion, Walter Dion and Son. (M7-C250-D7-ASDF-CH3).

Greece, N. Y. CENTRAL DR., Spencerport Rd. Exec: William Tishkoff, Central Drive-In, Inc.
(M7-C675-D7-ASDF-CH3).

Minetto, N. Y. MIDWAY DR., Route 48. Exec: (SLOT) R. C. Canter, Midway Enterprises, Inc.
(M7-C450-D7-ASDF-CH3).

Niagara, N. Y. STARLITE DR., Military Rd. Exec: H. Lurie, County Theatres, Inc. (M8-C730-D7-SF-CH3).

Pendleton, N. Y. NITEWAY DR., Transit Rd. Exec: Fred Henn, Henn and Miller. (M7-C400-D7-ASDF-CH3).

Tonawanda, N. Y. NIAGARA DR., Niagara Falls Boulevard. Exec: James Driscoll, Driscoll and Karselan, Inc.
(M7-C700-D7-SF-CH3).

Wallington, N. Y. SKYWAY DR., Route 104. Exec: George Mason.
(M7-C400-D7-ASDF-CH3).

CHARLOTTE TERRITORY
North Carolina

Albemarle, N. C. DRIVE-IN, Highway 27 (Portable). Exec: G. L. Faw.
(M8-C150-D7-SF-CH4).

Asheville, N. C. DREAMLAND DR., Highway 70. Exec: Ben Pleas.
(M8-C600-D7-SF-CH4).

Belmont, N. C. DRIVE-IN, Highway 223 (Portable). Exec: G. L. Faw.
(M8-C150-D7-SF-CH4).

Burlington, N. C. DRIVE-IN, Highway 87. Exec: J. F. White, Jr.
(M8-C400-D7-ASDF-CH4).

Chapanoke, N. C. DRIVE-IN, Off Highway 17. Exec: W. O. Gregory.
(M8-C125-D7-SF-CH5).

Charlotte, N. C. DRIVE-IN, Highway 29. Exec: (DIXIE) Jack Ellwell, Dixie Drive-In Theatres.
(M8-C500-D7-ASDF-CH3).

Charlotte, N. C. NORTH 29 DR., Highway 29. Exec: R. C. Saunders, Theatre Booking Service.
(M8-C500-D7-ASDF-CH5).

Chocowinity, N. C. CHO CO DR., Highway 17 (Portable). Exec: Floyd Cox.
(M7-C200-D7-ASDF-CH4).

AN ATTRACTIVE DANCING GIRL entrance sign points the way to the Kallet, Syracuse, New York.



Clinton, N. C. MOTOR PARK DR., Highway 42 (Portable). Exec: C. B. Hayworth.

Concord, N. C. AIRPORT DR., Highway 73 (Portable). Exec: Lewis K. Whitley. (M8-C200-D6-SF-CH4).

Concord, N. C. CONCORD DR., Highway 29. Exec: S. L. Stalling. (M8-C250-D7-SF-CH4).

Concord, N. C. CAROLINA DR., Highway 29A. Exec: A. T. Biggart. (M8-C200-D6-SF-CH4).

Dunn, N. C. FLOYDS DR., Highway 421 (Portable). Exec. Floyd Adcock. (M7-C150-D7-ASDF-CH4).

Durham, N. C. CHAPEL HILL ROAD DR., Highway 15 (Portable). Exec: W. T. Marshall, Jr. (M8-C175-D7-SF-CH4).

Durham, N. C. MIDWAY DR., Highway 70 (Portable). Exec: J. W. Wallace. (M8-C150-D7-SF-CH4).

Durham, N. C. STARLIGHT DR., Highway 15. Exec: A. C. Riggsby. (M8-C175-D7-SF-CH4).

Elkin, N. C. ELKIN-JONESVILLE DR., Highway 21. Exec: Dr. James. (M8-C250-D6-SF-CH4).

Fairmont, N. C. DRIVE-IN, Highway 41 (Portable). Exec: E. L. McKenzie. (M7-C200-D7-SF-CH4).

Fayetteville, N. C. BOULEVARD DR., Highway 87 (Portable). Exec: Howard McNally. (M7-C200-D7-SF-CH4).

Fayetteville, N. C. SKYVIEW DR., Highway 15A (Portable). Exec: James E. Willons. (M7-C350-D7-SF-CH4).

Forest City, N. C. TRI-CITY DR., Highway 74. Exec: Jerry Mundy. (M8-C150-D6-SF-CH4).

Fuquay Springs, N. C. 5 POINTS DR., Highway 42 (Portable). Exec: (WADE) L. M. Wade. (M7-C150-D6-SF-CH3).

Gastonia, N. C. FRIENDLY DR., Highway 321. Exec: F. B. Grigg. (M8-C225-D7-SF-CH4).

Goldsboro, N. C. DRIVE-IN, Highway 70 (Portable). Exec: D. W. Ramsay. (M7-C150-D7-SF-CH4).

Greensboro, N. C. DRIVE-IN, Highway 29. Exec: (DIXIE) Jack Ellwell, Dixie Drive-In Theatres. (M8-C500-D7-ASDF-CH4).

Greenville, N. C. OPEN AIR, Highway 11 (Portable). Exec: Harold Adler. (M7-C300-D7-SF-CH4).

Henderson, N. C. DRIVE-IN, Highway 1 (Portable). Exec: Roy Turner and Bill Gregory. (M7-C350-D6-SF-CH3).

Hickory, N. C. DRIVE-IN, Highway 64. Exec: J. P. Mull. (M8-C200-D7-SF-CH5).

Hudson, N. C. DRUMS DR., Highway 321 (Portable). Exec: R. D. Drum. (M8-C150-D6-SF-CH4).

Jacksonville, N. C. DRIVE-IN, Highway 17 (Portable). Exec: N. J. Kellum. (M7-C150-D7-SF-CH4).

Kannapolis, N. C. PARK-IN. Exec: (EVER) H. H. Everett, Everett Enterprises, Inc. (M8-C450-D7-ASDF-CH4).

Kinston, N. C. DRIVE-IN, Highway 70 (Portable). Exec: E. S. Holland. (M7-C150-D7-SF-CH4).

Laurel Hill, N. C. AUTO DR., Highway 74 (Portable). Exec: H. L. Britt. (M8-C200-D7-SF-CH5).

Laurinburg, N. C. PARK-IN, Highway 74. Exec: H. L. Britt. (M8-C150-D6-SF-CH4).

Leaksville, N. C. DRIVE-IN, Highway 770. Exec: D. L. Craddock. (M8-C150-D6-SF-CH4).

Liberty, N. C. LIBERTY DR., Highway 49 (Portable). Exec: Holder and Stanley. (M8-C250-D6-SF-CH3).

Lillington, N. C. CRUISE-IN, Highway 421 (Portable). Exec: A. J. Collins. (M7-C170-D6-SF-CH3).

Lincolnton, N. C. FRIENDLY DR., Highway 321. Exec: Ben Nation and F. B. Grigg. (M8-C200-D6-SF-CH4).

Lincolnton, N. C. ROSELAND DR., Highway 27. Exec: Wray Chapman. (M8-C250-D6-SF-CH4).

Lincolnton, N. C. STARLIGHT DR., Highway 321. Exec: A. E. Miller. (M8-C391-D7-SF-CH3).

Locust, N. C. DRIVE-IN, Highway 158 (Portable). Exec: Mrs. R. A. Goodman. (M8-C150-D4-SF-CH4).

Lumberton, N. C. DRIVE-IN, Highway 74 (Portable). Exec: H. L. Bailey. (M7-C150-D6-SF-CH3).

Madison, N. C. DRIVE-IN, Highway 220 (Portable). Exec: J. T. Baker. (M8-C175-D6-SF-CH4).

Marion, N. C. GARDEN CITY DR., Highway 64. Exec: W. C. Macon. (M8-C200-D6-SF-CH4).

Merry Hill, N. C. MIDWAY DR., Highway 45 (Portable). Exec: V. D. Perry. (M7-C196-D7-SF-CH4).

Monroe, N. C. DRIVE-IN, Highway 74 (Portable). Exec: Ray Sanford. (M8-C125-D7-SF-CH5).

Mooresville, N. C. MOORESVILLE-DAVIDSON DR., Highway 21 (Portable). Exec: W. C. Kiser. (M8-C200-D6-SF-CH4).

Morganton, N. C. SKYLINE DR., Highway 64. Exec: Accardi and Spake. (M8-C250-D6-SF-CH4).

Mt. Airy, N. C. DRIVE-IN, Highway 52. Exec: L. C. Davis. (M8-C150-D6-SF-CH4).

Murfreesboro, N. C. MURFREE DR., Highway 158 (Portable). Exec: L. S. Lee. (M7-C150-D6-SF-CH3).

New Bern, N. C. DRIVE-IN, Highway 70 (Portable). Exec: E. S. Holland. (M8-C150-D7-SF-CH4).

Newton Grove, N. C. DRIVE-IN, Highway 701 (Portable). Exec: C. Felton Godwin. (M7-C200-D6-SF-CH3).

N. Wilkesboro, N. C. DRIVE-IN, Highway 16 (Portable). Exec: R. B. Adams. (M8-C150-D6-SF-CH4).

Pink Hill, N. C. MOTOR PARK, Highway 11 (Portable). Exec: C. B. Hayworth. (M7-C160-D6-SF-CH3).

Raeford, N. C. DRIVE-IN, Highway 20 (Portable). Exec: Billy Faulk. (M7-C200-D6-SF-CH3).

Raleigh, N. C. CAR-RAL DR., Highway 64. Exec: Scott Lett. (M7-C200-D7-SF-CH4).

Rockingham, N. C. SKY-VU DR., Highway 74 (Portable). Exec: J. M. Kime. (M7-C200-D6-SF-CH3).

Rocky Mount, N. C. DRIVE-IN, Highway 64 (Portable). Exec: Vernon Holder. (M7-C150-D7-SF-CH4).

Salisbury, N. C. SALISBURY DR., Highway 29. Exec: J. W. Martin and S. L. Pinkston. (M8-C200-D7-SF-CH5).

Sanford, N. C. DRIVE-IN, Highway 1. Exec: H. J. Chapman. (M7-C300-D7-SF-CH4).

Shelby, N. C. CLEVELAND DR., Highway 74 (Portable). Exec: Paul Reynolds. (M8-C150-D6-SF-CH4).

Shelby, N. C. SHELBY DR., Highway 18. Exec: C. V. Queen. (M8-C250-D6-SF-CH4).

Skyland, N. C. DRIVE-IN, Highway 25. Exec: C. K. Carlyle. (M8-C150-D6-SF-CH4).

Smithfield, N. C. DRIVE-IN, Highway 301. Exec: G. L. Faw. (M7-C190-D6-SF-CH3).

Southern Pines, N. C. STARVIEW DR., Highway 1 (Portable). Exec: Dave Williamson, Southern Drive-In Theatres, Inc. (M7-C200-D7-SF-CH4).

Statesville, N. C. VILLA HEIGHTS DR., Highway 21. Exec: C. L. Cline. (M8-C225-D6-SF-CH4).

Tabor City, N. C. DRIVE-IN, Highway 701 (Portable). Exec: G. N. Gore. (M7-C175-D6-SF-CH3).

Thomasville, N. C. MIDWAY DR., Highway 29. Exec: (B&L) T. A. Little, B. and L. Enterprises. (M8-C400-D7-SF-CH5)

Wadesboro, N. C. ANSON COUNTY DR., Highway 74. Exec: J. F. Medley. (M8-C175-D6-SF-CH4).

Wallace, N. C. DRIVE-IN, Highway 117 (Portable). Exec: W. E. Thrush. (M7-C200-D7-SF-CH4).

Washington, N. C. PARKVIEW DR., Highway 264 (Portable). Exec: E. Bateman. (M7-C250-D7-SF-CH4).

Whiteville, N. C. CAROLINA DR., Highway 76. Exec: W. E. Thrush. (C200-CLOSED).

Whiteville, N. C. STARLIGHT DR., Highway 76 (Portable). Exec: Marion Davis. (M7-C175-D7-SF-CH4).

Wilmington, N. C. CAROLINA BEACH RD. DR., Highway 42 (Portable). Exec: W. E. Thrush. (M7-C200-D7-SF-CH4).

Wilmington, N. C. WRIGHTSVILLE RD. DR., Highway 74. Exec: Irwin Rourk. (M8-C190-D7-SF-CH4).

Winston Salem, N. C. DRIVE-IN, Highway 158. Exec: P. G. McGee. (M8-C300-D7-SF-CH4).

Winston Salem, N. C. SKYVIEW DR., Highway 421. Exec: Fred Sessoms. (M8-C300-D7-SF-CH4).

South Carolina

Aiken, S. C. DRIVE-IN, Highway 278. Exec: H. W. Hall. (M7-C150-D7-SF-CH4).

Anderson, S. C. SKYWAY DR., Highway 178. Exec: P. C. Osteen. (M8-C372-D6-SF-CH4).

Bamberg, S. C. DRIVE-IN, Highway 78 (Portable). Exec: Wilbur Free. (M8-C100-D6-SF-CH4).

Beaufort, S. C. DRIVE-IN, Highway 21 (Portable). Exec: H. O. Peoples. (M8-C200-D7-SF-CH5).

Bennettsville, S. C. BONDS AUTO DR., Highway 9. Exec: Walter H. Bond. (M8-C175-D6-SF-CH3).

Camden, S. C. CAMDEN DR., Highway 1 (Portable). Exec: Charles Blyther. (M8-C175-D7-SF-CH5).

Columbia, S. C. ALTA VISTA DR., Highway 1. Exec: J. M. Smith. (M8-C200-D7-SF-CH4).

Columbia, S. C. DRIVE-IN, Route 76. Exec: (WILBK) H. F. Kincey, Wilby-Kincey Service Corp. (M8-C500-D7-ASDF-CH4).

Conway, S. C. DRIVE-IN, Highway 503. Exec: H. V. Hewitt. (M8-C160-D6-SF-CH4).

Crescent Beach, S. C. DRIVE-IN, Highway 17. Exec: C. B. Floyd. (M8-C300-D7-SF-CH5).

Dillon, S. C. DRIVE-IN, Highway 301 (Portable). Exec: W. S. Herrying. (M8-C250-D6-SF-CH4).

Ehrhardt, S. C. DRIVE-IN, Highway 64 (Portable). Exec: J. T. Greene. (M8-C150-D6-SF-CH4).

Florence, S. C. DRIVE-IN, Highway 76. Exec: Ken Benson. (M8-C150-D7-ASDF-CH4).

Georgetown, S. C. HIGHWAY 17 DR., Highway 17 (Portable). Exec: M. L. Abrams. (M8-C150-D7-SF-CH5).

Greenwood, S. C. DRIVE-IN, Highway 22. Exec: A. T. Livingston. (M8-C250-D7-SF-CH5).

Hartsville, S. C. DRIVE-IN, Highway 151 (Portable). Exec: Tony Jones. (M8-C150-D6-SF-CH4).

Holly Hill, S. C. DRIVE-IN, Highway 15 (Portable). Exec: L. A. Ayers. (M8-C125-D7-SF-CH5).

Lancaster, S. C. MOTOR-IN, Highway 93. Exec: A. J. Biggart. (M8-C150-D6-SF-CH4).

Laurens, S. C. DRIVE-IN, Highway 221. Exec: Jack Davis. (M12-C200-D6-SF-CH4).

Lyman, S. C. DRIVE-IN, Highway 29. Exec: B. C. Williams. (M12-C375-D7-SF-CH5).

Marion, S. C. DRIVE-IN, Highway 501 (Portable). Exec: R. W. Pigg. (M8-C175-D6-SF-CH4).

N. Charleston, S. C. VICTORY DOWNS DR., Highway 17 (Portable). Exec: Dr. Hoitt. (M8-C90-D7-SF-CH5).

Orangeburg, S. C. CARDOVA DR., Highway 42 (Portable). Exec: B. F. Watkins. (M8-C150-D7-SF-CH5).

Orangeburg, S. C. ORANGEBURG DR., Highway 210 (Portable). Exec: Mrs. Florence Tarlton. (M8-C150-D7-SF-CH5).

Piedmont, S. C. DRIVE-IN, Highway 29 (Portable). Exec: Jimmy Gable. (M8-C400-D7-SF-CH5).

Rock Hill, S. C. FT. ROC DR., Highway 21. Exec: Bob Jefferies. (M8-C300-D6-SF-CH4).

Seneca, S. C. DRIVE-IN, Highway 28 (Portable). Exec: Morris Land. (M8-C175-D6-SF-CH4).

Summerville, S. C. DRIVE-IN, Highway 64 (Portable). Exec: L. A. Ayers. (M8-C200-D7-SF-CH5).

Sumter, S. C. DRIVE-IN, Highway 521 (Portable). Exec: Curtis Tarlton. (M8-C150-D7-SF-CH5).

Union, S. C. DRIVE-IN, Highway 92. Exec: J. O. Corn and W. H. McColl. (M8-C225-D6-SF-CH4).

Walterboro, S. C. DRIVE-IN, Highway 17. Exec: E. B. Funderburk. (M12-C150-D7-SF-SH5).

CHICAGO TERRITORY

Illinois

Bloomington, Ill. PHIL KRON, Junction Highways 51 and 66. Exec: Phil Kron, Kenneth Phillips. (M5-C500-D7-SF-CH4).

Chicago, Ill. OUTDOOR, Irving Park Rd. and Harlem Avenue. Exec: Irving Gandall, Outdoor Theatre Corp. (M7-C1000-D7-SF-CH1).

*Is substituted whenever any data is not yet recorded or available.

MASSIVE PROJECTION EQUIPMENT is shown below in the booth of the Outdoor, Chicago, Illinois.



Chicago, Ill. TWIN DR., 87th and Cicero Sts. Exec: N. S. Barger, Oaklawn Drive-In Theatre, Inc.
(M7-C2000-D7-SF-CH1).

Decatur, Ill. DRIVE-IN, 2500 North Jasper. Exec: (KERA) George Kerasotes, Kerasotes Circuit.
(M6-C950-D7-ASDF-CH3).

Elmhurst, Ill. SKI-HI DR., Butterfield and Roosevelt Rds. Exec: Louis Jelinek.
(M6-C450-D7-SF-CH2).

La Grange, Ill. SIXTY-SIX DR., Lyons Township. Exec: (MIDWST) Phillip Smith, Lyons Drive-In Theatre Co.
(M6-C700-D7-SF-CH2).

Maywood, Ill. NORTH AVE. OUTDOOR, River Rd. near North Avenue. Exec: Irving Gandall, Outdoor Theatre Corp. (M8-C1000-D7-SF-CH1).

Morton Grove, Ill. DRIVE-IN, Waukegan and Wolf Rds. Exec: N. S. Barger, Illinois Drive-In Theatre Co.
(M6-C1000-D7-SF-CH1).

Peoria, Ill. PEORIA DR., Glen Avenue near University. Exec: Ralph Lawler, Peoria Drive-In Co.
(M6-C800-D7-SF-CH3).

Rockford, Ill. RIVER LANE OUTDOOR, Highway 173. Exec: Manne Shermer, Riverlane Amusement Corp.
(M7-C650-D7-SF-CH3).

Springfield, Ill. DRIVE-IN, Junction Highway 66 and 29. Exec: J. N. Sikes, Springfield Drive-In Co.
(M6-C800-D6-SF-CH3).

Indiana

Griffith, Ind. GRIFFITH DR., Route 6. Exec: (MIDWST) Phillip Smith, Griffith Drive-In Theatre Co., Inc.
(M6-C600-D7-SF-CH3).

Lakeland, Ind. STARLIGHT DR., Routes 12 and 22. Exec: Peter McKeone, Crescent Drive-In Corp.
(M6-C430-D7-SF-CH3).

Osceloa, Ind. STARLIGHT, Routes 20 and 219. Exec: Louis Cochovety, Holly Corp. (M6-C400-D7-SF-CH3).

South Bend, Ind. SOUTH BEND AUTO, Western Ave. and Mayflower Rd. Exec: (OCHA) Albert Ochs, South Bend Drive-In Theatre, Inc. (M6-C650-D7-SF-CH3).

CINCINNATI TERRITORY

Kentucky

Covington, Ky. DIXIE GARDENS, Dixie Highway. Exec: Willis Vance, Dixie Gardens Outdoor Theatre Corp.
(M8-C700-D7-ASDF-CH3).

Florence, Ky. FLORENCE DR., Highways 42 and 25. Exec: William R. Machklin, Richard P. Ernst Realty Co.
(M8-C625-D7-ASDF-CH4).

Georgetown, Ky. BLUE GRASS DR., Route 25. Exec: Mark Cummins, Cummins and Toepfer.
(M8-C250-D7-ASDF-CH4).

Irvine, Ky. PALMER DR. Exec: J. T. Palmer. (C200-CLOSED).

Ohio

Allensburg, O. ROSELAWN AUTO, Route 50. Exec: J. Henry Davidson, Associated Theatres.
(M8-C250-D7-SF-CH4).

Belpre, O. BELPRE OPEN AIR, Route 50. Exec: Fred Helwig and Fred Clemens, Belpre Open Air Theatre, Inc.
(M8-C450-D7-SF-CH4).

Burlington, O. OUTDOOR, Route 52. Exec: Ross Williams, Burlington Theatre Co. (M8-C400-D7-SF-CH4).

Cassello, O. STARLIGHT DR., Route 127. Exec: Feltz Family, Frank and Richard Feltz. (M8-C300-D7-SF-CH4).

Chillicothe, O. MOONLIGHT AUTO, East Main Street. Exec: Barton Cook and Ed Payne, Barton Cook and Ed Payne, Inc. M8-C460-D7-SF-CH4).

Cincinnati, O. AUTO-IN (Price Hill), Anderson Ferry Rd. Exec: Harry Brown, Auto-In Theatre Co.
(M8-C400-D7-ASDF-CH4).

Columbus, O. AIRPARK, 2244 Morse Rd. Exec: Edmond Dorgan.
(C150-CLOSED).

Columbus, O. CCC AUTO, 1395 Harrisburg Pike. Exec: Frank Yassenoff and Harold Schwartz, Frank Yassenoff Enterprises. (M7-C400-D7-DF-CH3).

Columbus, O. EASTSIDE AUTO, 3811 East Main St. Exec: Frank Yassenoff and Harold Schwartz, Frank Yassenoff Enterprises. (M7-C350-D7-DF-CH3).

Columbus, O. MILES SCIOTO DR., 3050 Riverside Drive. Exec: Mrs. Ethel Miles, Riverside Amusement Co.
(M7-C450-D7-DF-CH3).

Columbus, O. MILES WEST BROAD, 4050 West Broad St. Exec: Mrs. Ethel Miles, West Broad Amusement Co.
(M7-C500-D7-DF-CH3).

Columbus, O. NATIONAL AUTO, 3750 West Broad. Exec: Leo Yassenoff.
(M8-C500-D7-DF-CH3).

Dayton, O. BELMONT AUTO-IN, Rural Route 2. Exec: Max Milbauer, Belmont Amusement Co.
(M8-C400-D7-ASDF-CH4).

Dayton, O. DAYTON DR., Valley Pike. Exec: (DRTM) Ben Wachnansy.
(M8-C400-D7-SF-CH4).

Dayton, O. MIAMI DR., 6500 West 3rd St. Exec: (DRTM) Ben Wachnansy.
(M8-C400-D7-SF-CH4).

Dayton, O. SALEM DR., 3815 Salem Ave. Exec: Robert Gump and Paul Swinger. (M8-C400-D7-SF-CH4).

Dayton, O. SHERWOOD DR., 5405 West 3rd St. Exec: Sam and Allen Levine, Sherwood Drive-In Theatre.
(M8-C350-D7-SF-CH4).

Dayton, O. SKYLINE DR., Route 25. Exec: William Walters, Skyline, Inc.
(M8-C650-D7-SF-CH4).

Dublin, O. RIVERSIDE AUTO, 5800 Riverside Drive. Exec: Frank Yassenoff and Harold Schwartz, Frank Yassenoff Enterprises. (M7-C300-D7-DF-CH3).

Eaton, O. CRUISE-IN, Route 35. Exec: (OCHH) Herb Ochs.
(M8-C400-D7-ASDF-CH4).

Excello, O. DIXIE CRUISE-IN, Route 4. Exec: L. J. King.
(M7-C450-D7-SF-CH4).

Forestville, O. FOREST AUTO, Route 125. Exec: R. L. Fitzwater.
(M7-C600-D7-ASDF-CH4).

Greenville, O. SPEEDWAY AUTO, Route 49. Exec: Schultz Bros.
(M8-C400-D7-SF-CH4).

Hamilton, O. HAMILTON OUTDOOR, Route 5. Exec: Louis Aldt.
(M7-C350-D7-ASDF-CH4).

Jasper Mills, O. CCC AUTO, CCC Highway. Exec: J. Henry Davidson, Associated Theatres. (M8-C400-D7-SF-CH4).

Lancaster, O. SKYVIEW DR., Box 62. Exec: Carloo Crumm and Ed Pulliam, Century Production, Inc.
(M8-C460-D7-SF-CH4).

Miamisburg, O. CRUISE-IN, Route 25. Exec: (OCHH) Herb Ochs.
(M7-C400-D7-ASDF-CH4).

Montgomery, O. DRIVE-IN, Montgomery Rd. Exec: (MIDWST) Phil Smith, Drive-In Theatre Corp. of Cincinnati.
(M8-C684-D7-ASDF-CH4).

Mt. Healthy, O. PARK-IN, Compton Rd. Exec: Louis Wiethe, Park-In Theatre, Inc. (M8-C575-D7-SF-CH5).

Mt. Holly, O. STARLITE, Route 125. Exec: Jerome Jackson, Starlite Theatre Co. (M8-C275-D7-ASDF-CH5).

Newark, O. VALLEY DR., North 21st Street. Exec: Floyd Price, Ditco Corp.
(M8-C500-D7-SF-CH4).

Piqua, O. PIQUA DR., Route 25. Exec: Robert Gump, Piqua Drive-In Theatre, Inc. (M8-C400-D7-SF-CH4).

St. Marys, O. LAKE DR., Route 29. Exec: Mrs. Leo Dwyer, Lake Drive-In Theatre Co. (M7-C400-D7-SF-CH4).

Springfield, O. MELODY CRUISE-IN, Route 119. Exec: Ray Sout.
(M8-C300-D7-SF-CH4).

Springfield, O. SKYWAY DR., Route 68. Exec: A. W. Buzzell, Belnori, Inc.
(M8-C500-D7-SF-CH5).

Springfield, O. STAR DUST DR., Route 68. Exec: Sam Levine.
(M6-C350-D7-DF-CH4).

Stockton, O. ACME AUTO, Route 4. Exec: Mark Cummins.
(M8-C300-D7-ASDF-CH4).

Troy, O. TROY DIXIE DR., Route 25. Exec: Moe and Elizabeth Potasky, Troy Dixie Corp. (M8-C465-D7-SF-CH4).

Wapakoneta, O. SUNSET CRUISE-IN, Route 33. Exec: Milton G. Pressor. (M8-C200-D7-SF-CH4).

Wheelersburg, O. DRIVE-IN, Rural Route 7. Exec: (OCHH) Herb Ochs, Scioto Drive-In Theatre Co. (M7-C500-D7-ASDF-CH5).

Wilmington, O. WILMINGTON DR., Route 134. Exec: (OCHH) Herb Ochs, Triangle Drive-In Co. (M8-C500-D7-ASDF-CH5).

Woodlawn, O. WOODLAWN DR., Springfield Pike. Exec: Nat Kaplan, Theatre Enterprises, Inc. (M8-C550-D7-ASDF-CH4).

Xenia, O. XENIA AUTO INN, Route 42 at Babb Rd. Exec: Dean Dennis, C. D. and J. Theatres, Inc. (M8-C400-D7-SF-CH4).

Zanesville, O. OLD TRAIL, R R 4, Bridgeville, O. Exec: Ray Waller and C. Huprick. (M7-C180-D7-ASDF-CH5).

West Virginia

Beckley, W. Va. BECKLEY OPEN AIR, Stanaford Rd. Exec: Fred Clemens, Clemens and Candler Theatre Co., Inc. (M8-C450-D7-ASDF-CH4).

Ceredo, W. Va. CEREDO DR., Route 60. Exec: Abe Hyman, Ceredo Operating Co. (M7-C500-D7-ASDF-CH4).

Lewisburg, W. Va. WALNUT DR., Route 219. Exec: David C. Weakley and Eugene V. Spence. (M7-C200-D7-ASDF-CH4).

Mason, W. Va. MASON DR., Route 14. Exec: Ross Filson. (M7-C350-D7-SF-CH4).

Princeton, W. Va. OUTDOOR, Bluefield and Princeton Road. Exec: A. R. Belcher. (M8-C102-D7-SF-CH4).

Rand, W. Va. TRAIL DR., 2217 Dupont Avenue. Exec: E. R. Custer, Auto Park Theatre, Inc. (M8-C650-D7-ASDF-CH4).

St. Albans, W. Va. VALLEY DR., Route 14 and 60. Exec: E. R. Custer, Dunbar Theatre Co. (M7-C500-D7-ASDF-CH4).

CLEVELAND TERRITORY

Ohio

Akron, O. ASCOT DR., Route 8. Exec: George A. Blake, Snook and Blake. (M6-C400-D7-DF-CH2).

Akron, O. STARLIGHT DR., Route 224. Exec: George A. Blake, Snook and Blake. (M6-C400-D7-DF-CH2).

Alliance, O. PARK AUTO, Route 62. Exec: S. Barck, Barck Bros. (M6-C430-D7-ASDF-CH3).

Ashtabula, O. ASHTABULA SKYWAY DR., Route 20. Exec: R. H. Manley. (M7-C250-D7-ASDF-CH3).

Barberton, O. AL STAN AUTO, Route 21. Exec: S. Fritz, Overko and Fritz. (M6-C200-D7-DF-CH3).

Berea, O. DRIVE-IN WEST SIDE, Riverside Drive. Exec: (MIDWST) Phil Smith, Drive-In Theatre Corp. of Cleveland, West. (M7-C600-D7-ASDF-CH3).

Cleveland, O. CLEVELAND AUTO DR., Route 17. Exec: (DRTM) Ben Wachnansy. (M6-C500-D7-ASDF-CH3).

Cleveland, O. DRIVE-IN EAST SIDE, Route 8. Exec: (MIDWST), Phil Smith, Drive-In Theatre Corp. of Cleveland, East. (M7-C600-D7-ASDF-CH3).

Cleveland, O. FAIRVIEW DR., Route 20. Exec: Horace Abrams, Castle Drive-In Theatres, Inc. (M6-C500-D7-SF-CH3).

Coshocton, O. DRIVE-IN. Exec: F. Gilfilen. (M7-C350-D7-ASDF-CH3).

Creston, O. CRESTON AUTO, Route 3. Exec: R. S. Martin. (M6-C300-D7-DF-CH3).

Defiance, O. DRIVE-IN, Route 66. Exec: C. Brinkman. (M6-C250-D7-ASDF-CH3).

Delaware, O. KINGMAN DR., Route 23. Exec: George Kaler, K. and W. Theatres, Inc. (M6-C500-D7-ASDF-CH4).

Delphos, O. STARLITE DR., Route 30. Exec: George Christofer, Christofer Bros. (M6-C350-D7-SF-CH4).

East Liverpool, O. SKY VIEW DR., Route 170. Exec: Lawrence Black. (M6-C250-D7-ASDF-CH3).

Fostoria, O. STARLITE DR., Route 224. Exec: Vergil Pfaul. (M6-C400-D7-SF-CH3).

Fremont, O. FREMONT DR., Route 20. Exec: S. Mosser, Mosser Bros. (M6-C500-D7-ASDF-CH3).

Goshen Township. TWILIGHT DR., Route 250. Exec: A. K. Veach. (M6-C500-D7-ASDF-CH3).

Harrisburg, O. MID-CITY DR., Route 62. Exec: Jerry Reinhart, Reinhart Bros. (M6-C500-D7-ASDF-CH3).

Kingsville, O. MIDWAY AUTO NORTH, Route 20. Exec: Foster Hathaway. (M7-C400-D7-ASDF-CH4).

Lima, O. DRIVE-IN, Route 25. Exec: H. Shock. (M6-C400-D7-ASDF-CH3).

Lima, O. GLORIA DR., Route 25. Exec: H. Shock. (M6-C500-D7-ASDF-CH3).

Lorain, O. LORAIN DR., Route 2. Exec: Wilbur Ptak. (M6-C500-D7-ASDF-CH3).

Madison, O. SKYWAY DR., Route 20. Exec: H. Manley. (M6-C400-D7-ASDF-CH3).

*Is substituted whenever any data is not yet recorded or available.

THE FRONT RAMP of the Drive-In, Wilmington, Ohio, provides comfortable seating for walk-in's.



Mansfield, O. MANSFIELD GALION DR., Route 30. Exec: Jack Phillips. (M6-C500-D7-ASDF-CH3).

Mansfield, O. MIDWAY AUTO, Route 42. Exec: (OCHA) Al Ochs, Central Drive-In Theatres, Inc. (M6-C250-D7-SF-CH3).

Marion, O. MARION DR., Route 23. Exec: Horace Abrams. (M6-C300-D7-DF-CH3).

Massillon. STARK DR., Route 30. Exec: (SKIR) Joe Lissauer, Skirball Circuit. (M6-C500-D7-SF-CH4).

Maumee. MAUMEE DR., Route 20. Exec: Paul Wintner, Maumee Drive-In Theatres, Inc. (M6-C400-D7-ASDF-CH3).

Mentor, O. MENTOR DR. (Rd. No. 20). Exec: (SHUL) Jack Shulman, Shulman and Schwartz. (M6-C425-D7-SF-CH3).

Montrose, O. MONTROSE DR., Route 18. Exec: R. Tyrrell. (M6-C500-D7-SF-CH3).

Mt. Vernon, O. KNOX AUTO, Route 13. Exec: R. Sturgess, Sturgess and Backer. (M6-C300-D7-SF-CH4).

Niles, O. LA VERNE DR., Route 422. Exec: C. D. Clark, La Verne Drive-In, Inc. (M6-C250-D7-SF-CH4).

North Canton, O. AUTOMOBILE, Route 8. Exec: C. D. Clark, Automobile Theatres, Inc. (M6-C500-D7-SF-CH3).

Portage, O. SKY LITE DR., Route 25. Exec: (SCHW), Carl H. Schwyn, Carl H. Schwyn Theatres, Inc. (M7-C500-D7-SF-CH4).

Rayland, O. DRIVE-IN, Route 7. Exec: (OCHH) Herb Ochs, Herb Ochs Circuit. (M6-C300-D7-ASDF-CH4).

Rittman, O. SUNSET AUTO, Route 57. Exec: J. Frost and R. Saurer. (M6-C250-D7-ASDF-CH3).

Russells Point. EAST LAKE DR., Indian Lake. Exec: Jack Gutilla. (M6-C250-D7-ASDF-CH3).

Sandusky, O. SANDUSKY DR., Route 2. Exec: (SEITZ) Earl Seitz, Seitz Amusement Co. (M7-C500-D7-ASDF-CH3).

Steubenville, O. FAMILY DR., Route 7. Exec: (WELL) P. Wellman, Wellman Circuit. (M6-C400-D7-ASDF-CH3).

Steubenville, O. SUNSET AUTO, Route 43. Exec: R. Noltemeyer, Selby and Noltemeyer. (M6-C500-D7-ASDF-CH3).

Strausburg, O. BOYERS AUTO, Route 250. Exec: Roland Boyer. (M6-C400-D7-ASDF-CH3).

Toledo, O. DRIVE-IN, Route 223. Exec: (DRTM) Ben Wachnansy. (M6-C500-D7-ASDF-CH3).

Toledo, O. TELEGRAPH DR., Route 24. Exec: J. Dempsey. (M6-C500-D7-DF-CH3).

Uniontown, O. BLUEBIRD AUTO, Route 8. Exec: E. Ballau. (M6-C225-D2-SF-CH1).

Wadsworth, O. BLUE SKY DR., Route 224. Exec: John Sellby. (M6-C225-D7-ASDF-CH3).

Wooster, O. SKYLINE AUTO, Route 30. Exec: (ACAD) M. Yassenoff, Skyline Amusement Co. (M6-C300-D7-DF-CH3).

Youngstown, O. NORTHSIDE DR., Route 90. Exec: (WELL) P. Wellman, Wellman Circuit. (M6-C500-D7-ASDF-CH3).

Youngstown, O. SKY HI DR., Route 422. Foster Hathway, Mooney and Hathway. (M6-C250-D7-ASDF-CH4).

Youngstown, O. SOUTHSIDE DR., Route 7. Exec: (WELL) P. Wellman, Wellman Circuit. (M6-C500-D7-ASDF-CH3).

Youngstown, O. WESTSIDE DR., Route 18. Exec: (WELL) P. Wellman, Wellman Circuit. (M6-C500-D7-ASDF-CH3).

DALLAS TERRITORY

New Mexico

Albuquerque, N. M. CACTUS DR., Yale Ave. near Highway 66. Exec: (TEXAS) P. K. Johnston, Texas Consolidated Theatres, Inc. (M7-C680-D7-SF-CH4).

Clovis, N. M. YUCCA DR., Highway 70. Exec: Tom Griffing, Yucca Drive-In. (M8-C350-D7-ASDF-CH3).

Oklahoma

Muskogee, Okla. SIXTY-FOUR DR., Highway 64. Exec: (SULL) O. F. Sullivan, Sullivan Independent Theatres. (M7-C480-D7-SF-CH3).

Texas

Abilene, Tex. ELMWOOD DRIVE-IN, Highway 158. Exec: Ruth Likins, Elmwood Drive-In. (M8-C300-D7-SF-CH4).

Abilene, Tex. TOWER DR., Highway 8. Exec: O. M. Kirkabee, Tower Drive-In. (M9-C320-D7-SF-CH4).

Alice, Tex. BUCKHORN DR., Highway 44. Exec: H. C. Gunter, Buckhorn Drive-In. (M12-C300-D7-SF-CH4).

Amarillo, Tex. PALO DURO DR., Highway 87. Exec: Harold V. Wilson, W. F. W. Theatres, Inc. (M6-C400-D7-SF-CH4).

Amarillo, Tex. TRAIL DR., Highway 66. Exec: W. O. Bearden, Trail Drive-In. (M6-C400-D7-SF-CH4).

Argyle, Tex. COLONIAL DR., Highway 377. Exec: George Franklin, Colonial Drive-In. (M8-C300-D7-ASDF-CH4).

Austin, Tex. CHIEF DR., 5000 Block Georgetown Rd. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M7-C400-D7-ASDF-CH4).

Austin, Tex. MONTOPOLIS DR., Highway 71. Exec: (JOS) Eddie Joseph, Eddie Joseph Theatres, Inc. (M12-C350-D7-ASDF-CH3).

Austin, Tex. NORTH DR., Highway 81. Exec: (JOS) Eddie Joseph, Eddie Joseph Theatres, Inc. (M12-C285-D7-ASDF-CH3).

Austin, Tex. SOUTH DR., Highway 81. Exec: (JOS) Eddie Joseph, Eddie Joseph Theatres, Inc. (M12-C400-D7-ASDF-CH3).

Beaumont, Tex. CIRCLE DR., Highway 90. Exec: (JEFF) Julius M. Gordon, Jefferson Amusement Co., Inc. (M12-C400-D7-ASDF-CH4).

Big Spring, Tex. TERRACE DR., Highway 84. Exec: J. C. West, Terrace Drive-In. (M9-C375-D7-SF-CH4).

Brady, Tex. SKYLITE DR., Highway 87. Exec: J. D. Goode, Skylite Drive-In. (M9-C300-D7-SF-CH4).

Brownfield, Tex. HI HO DR., Highway 62. Exec: Charles and Lee Bailey, Hi Ho Drive-In. (M8-C300-D7-ASDF-CH4).

Brownsville, Tex. STAR DR., Highway 77. Exec: Howard Metzger, Star Drive-In. (M12-C300-D7-SF-CH4).

Brownwood, Tex. SUNSET DR., Highway 84. Exec: Ed Newman, Central Texas Theatres, Inc. (M12-C350-D7-SF-CH4).

Bryan, Tex. SKYWAY DR., Highway 6. Exec: Jack A. Farr, Jack A. Farr Amusement Co. (M9-C500-D7-ASDF-CH4).

Coleman, Tex. OAK DR., Highway 84. Exec: Roland Duus, Oak Drive-In. (M8-C300-D7-SF-CH4).

Corpus Christi, Tex. BLVD. DR., Lexington Blvd. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C300-D7-SF-CH3).

Corpus Christi, Tex. TEXAS DR., Highway 9. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C300-D7-SF-CH3).

Corsicana, Tex. NAVARRO DR., Highway 287. Exec: M. S. Cole, Navarro Drive-In Co. (M9-C250-D7-SF-CH4).

Dallas, Tex. BUCKNER BLVD. DR., Northwest Highway. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M7-C660-D7-ASDF-CH4).

Dallas, Tex. CHALK HILL DR., Dallas-Fort Worth, Highway 80. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M7-C400-D7-ASDF-CH4).

Dallas, Tex. NORTHWEST HIGHWAY DR., Northwest Highway. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M7-C400-D7-SF-CH4).

Denton, Tex. RANCHO DR. Exec: Lester Dollison, Rancho Drive-In. (M9-C350-D7-SF-CH4).

El Paso, Tex. DEL NORTE DR., Highway 54. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C300-D7-SF-CH3).

El Paso, Tex. EL PASO DR., Highway 80. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C300-D7-SF-CH4).

Fort Stockton, Tex. TRAIL DR., Highway 290. Exec: W. T. Ash, Trail Drive-In. (M8-C275-D7-SF-CH4).

Fort Worth, Tex. BELKNAP DR., Highways 377 and 121. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M7-C400-D7-ASDF-CH4).

Forth Worth, Tex. BOWIE BLVD. DR., Highways 80 and 377. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M7-C400-D7-ASDF-CH4).

Forth Worth, Tex. PIKE DR., Fort Worth Pike. Exec: H. Gibbons, Pike Amusement Co. (M9-C600-D7-SF-CH4).

Gainesville, Tex. HI HO DR., Highway 6. Exec: L. C. Dennis, Hi Ho Drive-In. (M8-C300-D7-ASDF-CH4).

Greggton, Tex. COLONIAL DR., Highway 80. Exec: W. M. Morrow, Colonial Drive-In. (M10-C300-D7-SF-CH4).

Harlingen, Tex. HARLINGEN VALLEY DR., Highway 83. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C300-D7-SF-CH4).

Houston, Tex. EPSOM DR., Jensen Rd., Highway 59. Exec: W. V. Ratcliff. (M12-C275-D7-SF-CH4).

Houston, Tex. MARKET STREET DR., 8601 Market St. Exec: C. H. Mitchamore, Mitchamore and Neves Amusement Co. (M12-C400-D7-SF-CH4).

Houston, Tex. SHEPERD RD. DR., Conroe Highway. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M12-C400-D7-ASDF-CH4).

Houston, Tex. SOUTH MAIN DR., Old Fort Bend Rd. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M12-C400-D7-ASDF-CH4).

Houston, Tex. WINKLER DR., Winkler and Telephone Rds. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M12-C400-D7-ASDF-CH4).

Kerrville, Tex. KERRVILLE DR., Highway 27. Exec: C. H. Mitchamore, Kerrville Drive-In. (M12-C300-D7-SF-CH4).

Kingsville, Tex. HI WAY DR., Highway 77. Exec: L. E. Harvey, Hi Way Drive-In. (M12-C250-D7-SF-CH4).

Lamesa, Tex. SKYVUE DR., Highways 180 and 87. Exec: R. A. Moret, Skyvue Drive-In. (M9-C300-D7-ASDF-CH4).

Lamesa, Tex. YUCCA DR., Highway 87. Exec: Audrey Cox, Yucca Drive-In. (M7-C300-D7-SF-CH4).

Laredo, Tex. TOWER DR., Highway 81. Exec: Arnulfo Gonzales, Tower Drive-In. (M12-C400-D7-ASDF-CH3).

Levelland, Tex. SPADE DR., Highway 290. Exec: (BLAN) Wallace Blankenship, Blankenship Theatres. (M9-C250-D7-SF-CH4).

Littlefield, Tex. L.F.D. DR., Highway 84. Exec: W. J. Chesher, W. J. Chesher Theatres. (M8-C300-D7-ASDF-CH4).

Lubbock, Tex. CORRAL DR., Highway 82. Exec: (GRIF) Cliff White, Jr., Lindsey Theatres, Inc. (M7-C400-D7-SF-CH3).

Lubbock, Tex. FIVE POINT DR., Highway 62. Exec: P. E. Smith, Five-Point Drive-In. (M9-C350-D7-ASDF-CH4).

Lubbock, Tex. PLAINS DR., Highway 290. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M9-C350-D7-SF-CH4).

Mertzon, Tex. MERTZON DR., Highway 67. Exec: J. Kirkabee, Mertzon Drive-In. (M9-C150-D6-SF-CH3).

Midland, Tex. CHIEF DR., Highway 158. Exec: (GRIF) Cliff White, Jr., Consolidated Theatres, Inc. (M7-C400-D7-SF-CH4).

Midland, Tex. TEXAN DR., Highway 80. Exec: Taylor Jones, Texan Drive-In. (M9-C300-D7-ASDF-CH4).

Odessa, Tex. CACTUS DR., Highway 80. Exec: Millard Jones, Cactus Drive-In. (M8-C400-D7-SF-CH4).

Paris, Tex. 271 DR., Highway 271. Exec: Bell Brothers, 271 Drive-In. (M8-C300-D7-ASDF-CH3).

Pharr, Tex. CACTUS DR., Highway 83. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M12-C400-D7-ASDF-CH4).

Plainview, Tex. PIONEER DR., Highway 70. Exec: Bob Moran, Plainview Drive-In. (M7-C400-D7-SF-CH4).

Port Arthur, Tex. SURF DR., Highway 87. Exec: (JEFF) Julius M. Gordon, Jefferson Amusement Co., Inc. (M12-C400-D7-ASDF-CH4).

Rockdale, Tex. REEL DR., Highway 79. Exec: (MATS) Mrs. C. W. Matson, Matson Theatres. (M12-C300-D7-SF-CH3).

San Angelo, Tex. STARDUST DR., Highway 87. Exec: R. H. Hendrick, Stardust Drive-In. (M9-C250-D7-SF-CH4).

San Angelo, Tex. TWILIGHT DR., Highway 87. Exec: R. H. Hendrick, Stardust Drive-In. (M9-C200-D7-SF-CH4).

San Antonio, Tex. ALAMO DR., Highway 81. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C350-D7-ASDF-CH4).

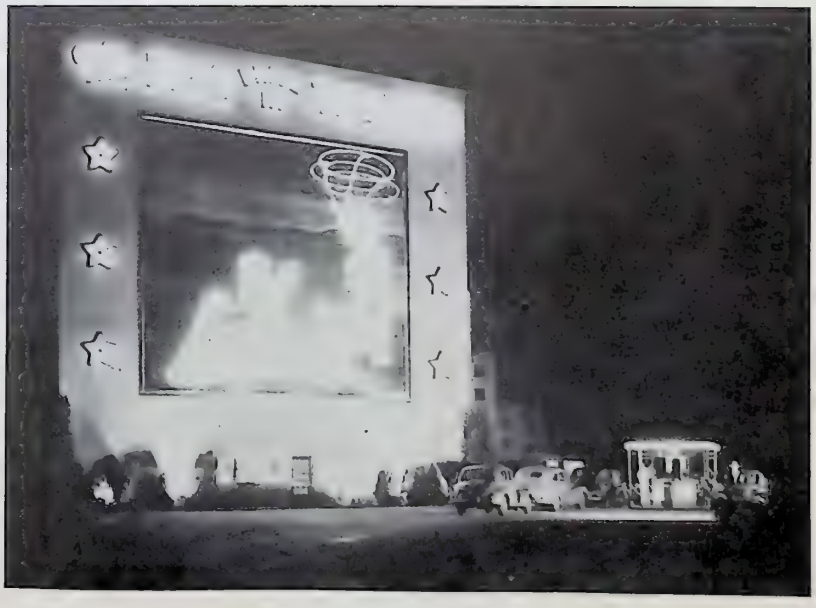
San Antonio, Tex. FREDERICKSBURG RD. DR., Highway 87. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M12-C400-D7-ASDF-CH4).

San Antonio, Tex. MISSION DR., Highway 281. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C350-D7-ASDF-CH4).

San Antonio, Tex. SAN PEDRO OPEN AIR, Highway, Highway 281. Exec: Al Wolfe, San Pedro Open Air. (M12-C400-D7-SF-CH4).

*Is substituted whenever any data is not yet recorded or available.

THE PIKE, FORT WORTH, TEXAS, features a neon mural with well lighted box office and entrance drive.



San Antonio, Tex. TRAIL DR., Military Drive Highway. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M12-C400-D7-ASDF-CH4).

Sherman, Tex. TWIN CITY DR., Highway 75. Exec: (LEON) T. Leon, Leon Theatres. (M9-C400-D7-SF-CH4).

Sweetwater, Tex. MIDWAY DR., Highway 80. Exec: Dorothy Wallace, Midway Drive-In. (M8-C320-D7-SF-CH4).

Temple, Tex. SUNSET DR., Highway 36. Exec: Jake Webb, Sunset Drive-In. (M12-C300-D7-SF-CH5).

Temple, Tex. TEM BEL DR., Highway 81. Exec: Skelton Bros., Tem Bel Drive-In. (M12-C400-D7-SF-CH4).

Tyler, Tex. STARLIGHT DR. Exec: (LEON) T. Leon, Leon Theatres. (M9-C400-D7-SF-CH4).

Victoria, Tex. TEJAS DR., Highway 295. Exec: (FREL) Rubin Frels, Frels Theatres. (M12-C350-D7-SF-CH3).

Waco, Tex. CIRCLE DR., Highway 81. Exec: (UNDER) C. C. Ezell, Underwood and Ezell. (M8-C400-D7-SF-CH4).

Waco, Tex. WACO DR., Highway 81. Exec: (LONE) C. A. Richter, Lone Star Amusement Co. (M12-C300-D7-SF-CH4).

Wichita Falls, Tex. FALLS DR., Highway 277. Exec: John Blocker, Falls Drive-In Co. (M9-C400-D7-SF-CH4).

Wichita Falls, Tex. OPEN AIR DR., Highway 287. Exec: J. R. Brown, Open Air Drive-In. (M8-C300-D7-SF-CH4).

Wichita Falls, Tex. SKYWAY DR., Highway 79. Exec: Lin Harrington, Skyway Drive-In. (M8-C350-D7-SF-CH4).

DENVER TERRITORY

Colorado

Colorado Springs, Colo. STARLIGHT, Highway 24. Exec: Paul Rothman, Rocky Mountain Theatre, Inc. (M7-C450-D7-DF-CH3).

Denver, Colo. EAST DR., 12600 East Colfax Ave. Exec: John Wolfberg, Denver Drive-In Theatre Corp. (M7-C750-D7-DF-CH3).

Denver, Colo. MOTORENA, 7300 North Federal Blvd. Exec: Irving Gilman, Carvue Theatres, Inc. (M7-C600-D7-ASDF-CH3).

Denver, Colo. WEST DR., West 6th and Kipling Avenues. Exec: John Wolfberg, Denver Drive-In Theatre Corp. (M7-C750-D7-DF-CH3).

Grand Junction, Colo. STARLIGHT, 2028 North Ave. Exec: Loyd Files, Open Air Amusements, Inc. (M8-C300-D7-ASDF-CH3).

Pueblo, Colo. PUEBLO DR., Highway 50. Exec: L. R. Semon, Pueblo Drive-In Theatre. (M7-C500-D7-DF-CH3).

New Mexico

Hatch, N. M. DRIVE-IN, Highway 85. Exec: John Bohannon, Bohannon Bros. (C-100-CLOSED).

Las Cruces. DRIVE-IN, Highway 85. Exec: H. F. and Donna Bowngton. (M7-C375-D7-SF-CH3).

DES MOINES TERRITORY

Illinois

Milan, Ill. MEMRI DR., Junction Highways 67, 92, and 6. Exec: W. A. Brotman, W. A. Brotman and Associates. (M7-C700-D7-SF-CH3).

Iowa

Davenport, Ia. BEL AIR, Fairgrounds. Exec: Julius Geertz, Bel Air Corp. (M7-C700-D7-SF-CH3).

Des Moines, Ia. DRIVE-IN, Southeast 14th and Hart. Exec: (TRI) A. H. Blank, Tri-States Theatre Corp. (M7-C700-D7-SF-CH3).

Fort Dodge, Ia. DRIVE-IN, Highway 169. Exec: Willis Warner, Willis Warner and Otis Heskett. (M7-C224-D7-SF-CH3).

Waterloo, Ia. STARLITE DR., Highway 218. Exec: Steven A. Oellerich, Oellerich and Winslow. (M7-C700-D7-SF-CH3).

DETROIT TERRITORY

Michigan

Adrian, Mich. DRIVE-IN, 3000 North Adrian Rd. Exec: Vincent Ochs, Adrian Drive-In Co. (M7-C400-D7-ASDF-CH3).

Ann Arbor, Mich. YPSI ANN DR., 4675 Washtenaw. Exec: Joseph Kinney, Ypsi Ann Drive-In Corp. (M7-C400-D7-ASDF-CH3).

Battle Creek, Mich. DRIVE-IN (Route 12). Exec: Paul O. Brake, Midwest Enterprises. (M7-C400-D7-ASDF-CH3).

Bay City, Mich. TUSCOLA DR. (Route M15). Exec: H. Bernstein, Bay City Drive-In Corp. (M7-C750-D7-ASDF-CH3).

Benton Harbor, Mich. DRIVE-IN (Route M 139). Exec: J. M. McKernan, Benton Harbor Drive-In Co. (M7-C400-D7-ASDF-CH3).

Constantine, Mich. AUTO (Route 131). Exec: Hal Lego. (M7-C125-D7-ASDF-CH3).

Dearborn, Mich. DEARBORN DR., 26500 Ford Rd. Exec: James Ross, Ross Theatre Corp. (M7-C650-D7-ASDF-CH3).

Detroit, Mich. EAST SIDE, 19440 Harper. Exec: (MIDWST) Phillip Smith, Midwest Drive-In Theatres, Inc. (M7-C500-D7-ASDF-CH3).

Ferndale, Mich. WEST SIDE, 8 Mile and Schaefer Rd. Exec: (MIDWST) Phillip Smith, Midwest Drive-In Theatres, Inc. (M7-C500-D7-ASDF-CH3).

Ecorse, Mich. MICHIGAN DR. (Route 25). Exec: Nicholas George, Michigan Drive-In Theatre Corp. (M7-C650-D7-ASDF-CH3).

Flint, Mich. CORUNNA WEST SIDE (Route M21). Exec: W. M. Rice, Drive-In Theatre, Inc. (M7-C775-D7-ASDF-CH3).

Flint, Mich. DORT EAST SIDE, 3750 Dort Highway. Exec: W. A. Rice, Drive-In Theatre, Inc. (M7-C700-D7-ASDF-CH3).

Flint, Mich. FLINT DR., Mt. Morris Rd. Exec: Ulmer, Gordon and Berne, Mt. Morris Drive-In Corp. (M7-C760-D7-ASDF-CH3).

Fraser, Mich. GRATIOT, 31900 Gratiot Ave. Exec: Alex Schreiber, Gratiot Drive-In Theatres Co. (M7-C1000-D7-ASDF-CH3).

Grand Rapids, Mich. BELTLINE, 1400 West 28th St. Exec: Jack Locks, Beltline Drive-In Theatre Co., Inc. (M7-C850-D7-ASDF-CH3).

Grand Rapids, Mich. DRIVE-IN, 5566 South Division. Exec: (OCHH) H. J. Ochs, Triangle Drive-In Co. (M7-C600-D7-ASDF-CH3).

Hillsdale, Mich. DRIVE-IN (Route M 99). Exec: Howard Sharpley. (M7-C200-D7-ASDF-CH3).

Jackson, Mich. DRIVE-IN, 4400 Ann Arbor Rd. Exec: Lawrence J. Aubry, Jackson Drive-In, Inc. (M7-C400-D7-ASDF-CH3).

Kalamazoo, Mich. AUTO, 4488 Portage Rd. Exec: (OCHA) A. W. Ochs, Kalamazoo Drive-In Theatre Co., Inc. (M7-C400-D7-ASDF-CH3).

Lansing, Mich. DRIVE-IN, East Michigan and Cady Rd. Exec: Lawrence J. Aubry, Lansing Drive-In Corp. (M7-C400-D7-ASDF-CH3).

Monroe, Mich. DRIVE-IN, 6720 North Monroe. Exec: Joseph Weisberg, Dixie Drive-In Theatre Corp. (M7-C275-D7-ASDF-CH3).

Muskegon, Mich. AUTO DR., 4291 Grand Haven Rd. Exec: (OCHA) A. W. Ochs, Muskegon Drive-In Theatre Co. (M7-C400-D7-ASDF-CH3).

Pontiac, Mich. BLUE SKY, Opydyke and Walton Rd. Exec: A. Robinson, Blue Sky Theatre, Inc. (M7-C400-D7-ASDF-CH3).

Pontiac, Mich. STARLITE, Williams Lake and Airport Rds. Exec: Joseph P. Warden, Starlite Theatre. (M7-C300-D7-ASDF-CH3).

Port Huron, Mich. DRIVE-IN, 5737 Lake Rd. Exec: (OCHH) H. J. Ochs, Bluewater Drive-In Theatre Co. (M7-C600-D7-ASDF-CH3).

Saginaw, Mich. AUTO, 5151 East Genesee. Exec: (OCHA) A. W. Ochs, Saginaw Drive-In Theatre Corp. (M7-C400-D7-ASDF-CH3).

Saginaw, Mich. TWILIGHT DR., 10 Mile Rd. Exec: (ASHM) R. Ashmun, Saginaw Drive-In Theatre, Inc.
(M7-C400-D7-ASDF-CH3).

Walled Lake, Mich. DRIVE-IN, 535 East Lake Drive. Exec: E. J. Patineau, Walled Lake Theatre, Inc.
(M7-C120-D7-ASDF-CH3).

INDIANAPOLIS TERRITORY

Indiana

Anderson, Ind. DRIVE-IN, Highway 32. Exec: (ALLI) S. J. Gregory, Alliance Theatre Corp. (M7-C500-D7-SF-CH4).

Bloomington, Ind. DRIVE-IN, Highway 45. Exec: (ALLI) S. J. Gregory, Alliance Theatre Corp.
(M7-C500-D7-ASDF-CH4).

Clayton, Ind. MAPLECROFT DR., Highway 40. Exec: Charles Morrison.
(M7-C250-D7-SF-CH3).

Connersville, Ind. DRIVE-IN, RR 44. Exec: Paul Shafer, United Enterprises.
(M7-C400-D7-SF-CH4).

Corydon, Ind. SKYAIR, Highway 337. Exec: (CAMP) George Finnegan, Corydon Drive-In Theatre, Inc.
(M7-C250-D7-ASDF-CH3).

Evansville, Ind. DRIVE-IN, RR 62. Exec: H. N. Coleman.
(M7-C600-D7-SF-CH3).

Evansville, Ind. FAMILY DR., Highway 41. Exec: R. A. Stieler.
(M7-C400-D7-SF-CH3).

Fort Wayne, Ind. DRIVE-IN, 5946 Bluffton Rd. Exec: (OCHH) Herbert Ochs, Fort Wayne Drive-In Theatre Co., Inc. (M7-C600-D7-ASDF-CH5).

Fort Wayne, Ind. WAYNE AUTO, Highway 33. Exec: Horace Shock, Wayne Auto Theatre Co.
(M7-C450-D7-ASDF-CH3).

Greenwood, Ind. DRIVE-IN, Highway 31. Exec: A. W. Hansen, Greenwood Drive-In Theatre Co.
(M7-C600-D7-ASDF-CH3).

Indianapolis, Ind. WESTSIDE OUTDOOR (Route 40). Exec: F. J. Songer, Westside Outdoor Theatre.
(M7-C500-D7-DF-CH3).

Jeffersonville, Ind. THEATAIR, Highway 31. Exec: R. L. Harned.
(M7-C300-D7-SF-CH3).

Kokomo, Ind. DRIVE-IN, Highway 31. Exec: (ALLI) S. J. Gregory, Alliance Theatre Corp.
(M7-C500-D7-ASDF-CH4).

Lafayette, Ind. SKI HI DR., Highway 26. Exec: (CAMP) Edward Campbell, Indiana Outdoor Theatre Corp.
(M7-C450-D7-SF-CH3).

Lawrence, Ind. DRIVE-IN, Highway 67. Exec: (MIDWST) Phillip Smith, Drive-In Theatre Corp. of Indianapolis.
(M7-C500-D7-SF-CH3).

Longansport, Ind. SKYLINE, R R 17. Exec: McLain and George.
(M7-C250-D7-ASDF-CH3).

Marion, Ind. HIGHWAY DR., Highway 21. Exec: (ALLI) S. J. Gregory, Alliance Theatre Corp.
(M7-C500-D7-ASDF-CH4).

Marion, Ind. MARIONAIR, Highway 21. Exec: Billy Conners, R. R. Marionair Theatre. (M7-C500-D7-SF-CH5).

Martinsville, Ind. AIRPORT DR., Highway 67. Exec: (CAMP) Fred C. Meyers, Airport Drive-In Theatre Co.
(M7-C150-D7-SF-CH3).

Maywood, Ind. OPEN AIR, Highway 67. Exec: Melvin E. Cox.
(M7-C300-D7-DF-CH3).

Muncie, Ind. DRIVE-IN, R R 7. Exec: (OCHH) Herbert Ochs, Muncie Drive-In Theatre Co., Inc.
(M7-C600-D7-ASDF-CH5).

Richmond, Ind. NATIONAL HI WAY, Highway 40. Exec: (HUDS) Robert Hudson. (M7-C500-D7-DF-CH3).

Terre Haute, Ind. DRIVE-IN, Lafayette Ave. at Hawthorne. Exec: (OCHH) Herbert Ochs, Terre Haute Drive-In Theatre Co., Inc. (M7-C600-D7-ASDF-CH5).

Veedersburg, Ind. DRIVE-IN, Highway 34. Exec: Joe Million.
(M7-C250-D7-ASDF-CH3).

Vincennes, Ind. DRIVE-IN, Highway 50. Exec: (ALLI) S. J. Gregory, Alliance Theatre Corp.
(M7-C500-D7-ASDF-CH4).

Winchester, Ind. AIR LINE AUTO, Road 32. Exec: Arthur Kemp, Air Line Auto Theatre, Inc.
(M7-C300-D7-SF-CH3).

Kentucky

Bowling Green, Ky. SUNSET DR., Highway 71. Exec: (CAMP) Edward Campbell, Warren Enterprises Corp.
(M7-C400-D7-SF-CH3).

Glasgow, Ky. BREEZE DR., Highway 31E. Exec: (CAMP) L. H. Lowe, Breeze Drive-In Theatre Co.
(M7-C250-D7-SF-CH3).

Hopkinsville, Ky. DRIVE-IN, Highway 49. Exec: (CAMP) Edward Campbell, Hopkinsville Drive-In Theatre Co.
(M7-C200-D7-SF-CH3).

Lebanon, Ky. DRIVE-IN, Highway 49. Exec: (CAMP) C. C. Sims, Lebanon Drive-In Theatre Co.
(M7-C250-D7-SF-CH3).

Louisville, Ky. SKYWAY, Highway 31E. Exec: (CAMP) Edward Campbell, American Drive-In Theatre Corp.
(M7-C500-D7-SF-CH3).

*Is substituted whenever any data is not yet recorded or available.



GRATIOT, FRASER, MICHIGAN, boasts of well lighted directional and changeable letter signs.

Owensboro, Ky. MOONLITE DR. Exec: (ANDE) Andy Anderson.
(M7-C400-D7-ASDF-CH4).

St. Matthews, Ky. EAST DR., Highway 31. Exec: Floyd Morrow.
(M7-C500-D7-SF-CH3).

Shivley, Ky. DIXIE DR., Highway 60. Exec: Floyd Morrow.
(M7-C500-D7-SF-CH3).

KANSAS CITY TERRITORY

Kansas

Arkansas City, Kans. 166 (Route 166). Exec: E. M. Tindell.
(M7-C300-D7-ASDF-CH3).

Dodge City, Kans. DODGE CITY DR., 2 miles South. Exec: Glen Cooper.
(M6-C300-D7-ASDF-CH3).

Garden City, Kans. GARDEN CITY DR., 2 Miles East. Exec: Glen Cooper.
(M6-C300-D7-ASDF-CH3).

Great Bend, Kans. GREAT BEND DR., Highway 50N. Exec: Mrs. Audrey Flynn.
(M6-C350-D7-ASDF-CH3).

Hutchinson, Kans. IRIS DR., Highway 50S. Exec: Robert Sproule.
(M6-C500-D7-ASDF-CH3).

Kansas City, Kans. KANSAS DR., Stoney Point Rd. and Highway 40. Exec: Rube Finklestein, Kansas Drive-In.
(M6-C600-D7-ASDF-CH3).

Parsons, Kans. DRIVE-IN, Highway 169. Exec: Louis Stein, Stein Theatres.
(M6-C500-D7-ASDF-CH3).

Pittsburgh, Kans. SIXTY-NINE DR., Highway 69. Exec: (DICK) G. W. Dickinson, Dickinson, Inc.
(M6-C500-D7-ASDF-CH3).

Salina, Kans. EIGHTY-ONE DR., Highway 81. Exec: (DICK) G. W. Dickinson, Dickinson, Inc.
(M6-C500-D7-ASDF-CH3).

Topeka, Kans. COMMUNITY DR., East Topeka. Exec: Claude Parris, Community Theatres, Inc.
(M6-C500-D7-ASDF-CH3).

Wichita, Kans. AIRPORT DR., South Wichita. Exec: Merle Barnes, Peerless Theatres. (M7-C650-D7-ASDF-CH3).

Wichita, Kans. EIGHTY-ONE DR., Highway 81. Exec: (SULL) O. F. Sullivan. (M7-C500-D7-ASDF-CH3).

Wichita, Kans. FIFTY-FOUR DR., Highway 54. Exec: (SULL) O. F. Sullivan. (M7-C650-D7-DF-CH3).

Missouri

Independence, Mo. DRIVE-IN, Highways 40 and 71. Exec: (MIDWST) Phillip Smith, Kansas City Outdoor Theatre Corp. (M7-C750-D7-ASDF-CH3).

Joplin, Mo. TRI-STATES DR., 66 Highway West. Exec: (COMM) Jack Braunagle, Tri-States Drive-In Corp.
(M6-C500-D7-ASDF-CH3).

Kansas City, Mo. CREST DR., 114th St. and Highway 71. Exec: (COMM) Jack Braunagle, Commonwealth Drive-In, Inc.
(M6-C900-D7-ASDF-CH3).

N. Kansas City, Mo. RIVERSIDE DR., Highways 45 and 71. Exec: (COMM) Jack Braunagle, Commonwealth Riverside Theatres, Inc.
(M6-C900-D7-ASDF-CH3).

St. Joseph, Mo. ST. JOSEPH BELT DR., Belt Highway and Highway 71. Exec: C. H. Martin, Missouri Motor Movies. (M6-C700-D7-ASDF-CH3).

Springfield, Mo. DRIVE-IN, Sunshine and Glentone. Exec: Rush Wilhoit, S. M. Taft Amusement Corp.
(M6-C600-D7-SF-CH3).

LOS ANGELES TERRITORY

Arizona

Phoenix, Ariz. INDIAN DR., Indian School Rd. and 27th Ave. Exec: (PANA) Harry L. Nace, Phoenix Drive-In Theatres. (M12-C600-D7-DF-CH3).

Phoenix, Ariz. PHOENIX DR., 3600 East Van Buren. Exec: (PANA) Harry L. Nace, Phoenix Drive-In Theatres.
(M12-C612-D7-DF-CH3).

Tucson, Ariz. MIDWAY DR., North Speedway. Exec: (MIDENT) Joseph Shure, Shure Theatres Corp.
(M12-C650-D7-DF-CH2).

California

Bakersfield, Calif. DRIVE-IN, Chester Ave. and Highway 99. Exec: Guy Meek and Edward Carruthers.
(M12-C450-D7-DF-CH3).

Burbank, Calif. SAN VAL DR., 2720 Winona Ave. Exec: (CALIF) Charles Caballero, California Drive-In Theatres, Inc. (M12-C560-D7-DF-CH2).

Clearwater, Calif. ROADIUM DR., 14711 South Paramount Blvd. Exec: Joe Bianchi, Modern Amusement, Inc.
M12-C550-D7-DF-CH3).

Culver City, Calif. STUDIO DR., 5250 Sepulveda Blvd. Exec: George E. Mitzel, La Vere Co. (C700-CLOSED).

El Centro, Calif. EL RANCHO DR., Highway 80. Exec: John Armm, Armm Theatre Corp. (C350-CLOSED).

El Monte, Calif. EL MONTE DR., Lower Azusa Rd. at Ellis Lane. Exec: (CALIF) Charles Caballero, Pacific Drive-In Theatres.
(M12-C861-D7-DF-CH3).

Gardena, Calif. VERMONT DR., 182nd and Vermont Ave. Exec: (CALIF) Charles Caballero, California Drive-In Theatres, Inc. (M12-C700-D7-DF-CH3).

Lemon Grove, Calif. LEMON BOWL CINEMA DINE, Federal Blvd. Exec: C. E. Norcross, Suburban Theatres, Inc.
(M12-C650-D7-DF-CH3).

Loma Linda, Calif. DRIVE-IN, Highway 99 at Richardson St. Exec: (CALIF) Charles Caballero, Pacific Drive-In Theatres, Inc.
(M12-C684-D7-DF-CH3).

Los Angeles, Calif. GILMORE DR., Third St. East of Fairfax Blvd. Exec: (SERO) William H. Oldknow, Los Angeles Drive-In Theatre Corp.
(M12-C600-D7-DF-CH1).

Los Angeles, Calif. OLYMPIC DR., 12109 West Olympic Blvd. Exec: (CALIF) Charles Caballero, California Drive-In Theatres, Inc.
(M12-C775-D7-DF-CH3).

Ontario, Calif. VALLEY DR., Valley Boulevard. Exec: (SERO) William H. Oldknow, Valley Drive-In Theatre Corp.
(M12-C650-D7-DF-CH3).

Orange, Calif. DRIVE-IN, Highway 101. Exec: (CALIF) Charles Caballero, California Drive-In Theatres, Inc.
(M12-C798-D7-DF-CH3).

Rialto, Calif. FOOTHILL AUTO, 655 East Foothill Blvd. Exec: Mrs. L. C. Tharp. (M12-C600-D7-DF-CH2).

San Diego, Calif. MIDWAY DR., 3091 Midway Drive. Exec: (MIDENT) Shure Theatres, Inc., Joseph Shure.
(M12-C450-D7-DF-CH2).

San Diego, Calif. RANCHO DR., Federal Blvd. Exec: (SERO) S.E.R.O. Enterprises, William H. Oldknow.
(M12-C600-D7-DF-CH1).

Ventura, Calif. 101 DR., Highway 101. Exec: Reeves Espy, 101 Drive-In Theatre Corp. (M12-C700-D7-DF-CH3).

Nevada

Las Vegas, Nev. MOTOR-VU DR., Highway 91. Exec: (ASSO) S. L. Gillette, Associated Amusement Co., Inc.
(M12-C566-D7-DF-CH3).

MEMPHIS TERRITORY

Alabama

Hamilton, Ala. DRIVE-IN, Rural (Route 1). Exec: J. H. Morrow, Drive-In Theatre. (M7-C113-D7-SF-CH4).

Arkansas

Fort Smith, Ark. TWENTY-TWO DR., Highway 22. Exec: (FLEX) David Flexer, Twenty-Two Drive-In Theatre, Inc. (M7-C600-D7-ASDF-CH3).

Fort Smith, Ark. SEVENTY-ONE DR. MOVIES, Jenny Lind Rd. and Highway 71. Exec: William L. Spicer, Seventy-One Drive-In Movies, Inc.
(M8-C290-D7-SF-CH6).

Hot Springs, Ark. WHEATLEY DR., Golf Links Rd. Exec: H. E. Wheatley, Wheatley Drive-In Theatre. (M6-C200-D7-ASDF-CH4).

Little Rock, Ark. ASHER DR., Asher Ave. Highway 7. Exec: (ROBB) C. V. Jones, Robb and Rowley United, Inc. (M9-C630-D7-ASDF-CH3).

N. Little Rock, Ark. DRIVE-IN, Highway 70. Exec: (MALC) Barney Woolner, Mid-South Theatres. (M7-C500-D7-ASDF-CH3).

Pine Bluff, Ark. DRIVE-IN MOVIES, Highway 65. Exec: C. F. Bonner, Drive-In Movies. (M7-C250-D7-SF-CH4).

Tennessee

Jackson, Tenn. DRIVE-IN, Highway 45. Exec: (MALC) M. A. Lightman, Met Enterprises. (M7-C300-D7-SF-CH4).

Memphis, Tenn. DRIVE-IN, Highway 78. Exec: (MALC) Barney Woolner, Century Theatres. (M7-C500-D7-DF-CH3).

Memphis, Tenn. SUMMER DR., 5150 Summer Ave. Exec: Kemmons Wilson and Louis Weaver, Summer Drive-In, Inc. (M9-C670-D7-ASDF-CH3).

MILWAUKEE TERRITORY
Wisconsin

Elm Grove, Wis. DRIVE-IN, Bluemound Rd. Exec: (MIDWST) Phillip Smith, Drive-In Theatre Corp. of Milwaukee. (M7-C650-D7-ASDF-CH3).

Franklin, Wis. FORTY-ONE OUTDOOR, Highway 41. Exec: (STAN) L. F. Gran, Standard Theatres Management. (M7-C904-D7-SF-CH2).

MINNEAPOLIS TERRITORY
Minnesota

Minneapolis, Minn. BLOOMINGTON DR., between Portland and Cedar on 78th St. Exec: Charles Rubenstein, United Theatres Corp. (M6-C500-D7-SF-CH4).

Rochester, Minn. OUTDOOR, Highways 14 and 52. Exec: Ralph Green, North State Enterprises. (M6-C550-D7-SF-CH4).

St. Paul, Minn. ROSE DR., North Snelling and County Rd. C. Exec: Charles Rubenstein, Minnesota Entertainment Enterprises. (M6-C600-D7-SF-CH4).

South Dakota

Sioux Falls. SOO-DELL DR., Highway 77. Exec: H. E. Hanson, Drive-In Theatre, Inc. (M6-C200-D7-SF-CH4).

NEW HAVEN TERRITORY
Connecticut

Bark Hamstead, Conn. ROGERS CORNER DR., Rogers Corners off Route 44. Exec: Vincent Yarmatz, Peoples Drive-In Theatres Corp. (M7-C300-D7-DF-CH3).

Milford, Conn. MILFORD DR. (Route 1). Exec: (LOEW) E. M. Loew Drive-In Theatres, Inc. (M7-C500-D7-DF-CH2).

Newington, Conn. HARTFORD DR. (Route 5). Exec: (LOEW) E. M. Loew, E. M. Loew Drive-In Theatres, Inc. (M7-C500-D7-DF-CH2).

Newington, Conn. PIKE (Route 5). Exec: Joseph Dolgin, Parkway Theatre Corp. (M7-C350-D7-DF-CH2).

North Haven, Conn. NEW HAVEN DR. (Route 5). Exec: David Willig, New Haven Drive-In Theatres, Inc. (M6-C500-D7-DF-CH3).

NEW ORLEANS TERRITORY
Alabama

Mobile Prichard. DRIVE-IN, Highway 45. Exec: (PARI) E. V. Richards, Jr., Paramount Richards Theatres, Inc. (M12-C500-D7-SF-CH4).

Florida

Pensacola, Fla. DRIVE-IN, Highway 90. Exec: (PARI) E. V. Richards, Jr., Paramount Richards Theatres, Inc. (M12-C500-D7-SF-CH4).

Louisiana

Amite, La. DRIVE-IN. Exec: Neil Mixon. (M9-C100-D6-SF-CH4).

Baton Rouge, La. DRIVE-IN, Highway 60. Exec: (PARI) E. V. Richards, Jr., Paramount Richards Theatres, Inc. (M12-C440-D7-SF-CH4).

Baton Rouge, La. TIGER DR., By Pass Highway 71. Exec: (FILM) L. C. Montgomery, Tiger Drive-In Theatres, Inc. (M12-C500-D7-SF-CH4).

Jefferson Parish, La. DRIVE-IN MOVIES, 4000 Jefferson Highway. Exec: (MALC) Bernard Woolner, Drive-In Movies, Inc. (M12-C548-D7-ASDF-CH3).

Lafayette, La. DRIVE-IN, Highway 90. Exec: Louis Michot. (M12-C300-D7-SF-CH4).

Minden, La. DRIVE-IN, Highway 80. Exec: (THRS) H. B. Hands, Theatres Service Co. (M8-C500-D2-SF-CH1).

New Iberia, La. DRIVE-IN, Highway 26. Exec: Louis Michot. (M8-C250-D7-SF-CH4).

Shreveport, La. DRIVE-IN, Greenwood Road and Highway 80. Exec: (PARI) E. V. Richards, Jr., Paramount Richards Theatres, Inc. (M8-C540-D7-SF-CH4).

Mississippi

Biloxi, Miss. GULF COAST DR., Pass Rd., Exec: C. A. Knight, Gulf Coast Drive-In, Inc. (M12-C300-D7-ASDF-CH4).

Hattiesburg, Miss. BEVERLY DR., 303½ 10th Avenue. Exec: H. Hargroder. (M12-C210-D7-SF-CH4).

Jackson, Miss. DRIVE-IN, Highway 80. Exec: (PARI) E. V. Richards, Jr., Paramount Richards Theatres, Inc. (M8-C400-D6-SF-CH3).

McCombs, Miss. REN DR., Highway 24. Exec: R. E. Renfroe. (M12-C275-D6-SF-CH4).

Meridian, Miss. DRIVE-IN (Route 19). Exec: G. R. Moody, Meridian Drive-In Theatres, Inc. (M12-C266-D7-ASDF-CH4).

*Is substituted whenever any data is not yet recorded or available.

THE MILFORD, MILFORD, CONNECTICUT, has an unusual scenic and attractive entrance lane.



Texas

Texarkana. DRIVE-IN, Highway 59. Exec: (PARI) E. V. Richards, Jr., Paramount Richards Theatres, Inc. (M8-C500-D7-SF-CH4).

NEW YORK TERRITORY

New Jersey

Farmingdale, N. J. FLY-IN DR. (Route 34). Exec: E. I. Brown, Monmouth Co. Airport Drive-In Theatre, Inc. (M8-C500-D7-SF-CH3).

Farmingdale, N. J. SHORE DR. (Routes 33 and 34). Exec: (ETRN) J. J. Thompson, Eastern Drive-In Corp. (M7-C800-D7-SF-CH3).

Morris Plains, N. J. DRIVE-IN (Route 10). Exec: (ETRN) J. J. Thompson, Eastern Drive-In Corp. (M8-C600-D7-ASDF-CH3).

Paramus, N. J. PARAMUS DR. (Route 4). Exec: J. J. Thompson, D. I. Company. (M8-C800-D7-ASDF-CH3).

Totowa, N. J. TOTOWA DR. (Route 6). Exec: (ETRN) J. J. Thompson, Eastern Drive-In Corp. (M8-C800-D7-ASDF-CH3).

Union, N. J. UNION DR. (Route 29). Exec: (ETRN) J. J. Thompson, Eastern Drive-In Corp. (M8-C600-D7-ASDF-CH3).

Woodbridge Township. DRIVE-IN (Route 25). Exec: (READE) Walter Reade, Jr., Drive-In Operating Corp. (M8-C900-D7-DF-CH3).

New York

Middletown, N. Y. MIDDLETOWN DR. (Routes 17 and 6). Exec: (LAMO) Harry Lamont, Middletown Drive-In, Inc. (M8-C300-D7-DF-CH4).

New York, S. I. DRIVE-IN, New Springville. Exec: (FAB) Si Fabian, Par Land Theatres, Inc. (M6-C600-D7-DF-CH3).

Valley Stream, N. Y. SUNRISE DR., Sunrise Highway. Exec: (LOEW) Sol Edwards, E. M. Loew Drive-In Theatres, Inc. (M8-C750-D7-DF-CH2).

OKLAHOMA CITY TERRITORY

Oklahoma

Bartlesville, Okla. DRI-VIN, Highway 60 (Portable). Exec: Joe Noble. (M6-C200-D7-SF-CH3).

Enid, Okla. ENID DR., Highway 81. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C618-D7-SF-CH3).

Lawton, Olka. AUSTIN DR., Highway 62. Exec: Earl Austin, Austin Brothers. (M9-C600-D7-SF-CH4).

Norman, Okla. RIVERSIDE DR., Highway 9. Exec: E. A. Anderson, Anderson Brothers. (M8-C400-D7-SF-CH4).

Oklahoma City, Okla. BEE GEE AUTO, East 29th St. Exec: Paul Brewer, Brewer and Goodrich. (M8-C400-D7-SF-CH3).

Oklahoma City, Okla. FAIR PARK, East 10th St. Exec: Horace Falls, S. W. Theatres Co. (M8-C250-D7-SF-CH3).

Oklahoma City, Okla. NORTH WEST HIWAY DR., North West Highway. Exec: (SULL) O. F. Sullivan, Starlight Amusement Co. (M8-C756-D7-SF-CH3).

Oklahoma City, Okla. SEVENTY-SEVEN DR., Highway 77. Exec: (BART) Lewis Barton. (M8-C900-D7-ASDF-CH3).

Oklahoma City, Okla. SKYVIEW DR., East 23rd St. Exec: Sam Caporal. (M8-C992-D7-SF-CH3).

Ponca City, Okla. SKYVUE DR., Highway 77. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C608-D7-SF-CH3).

Seminole, Okla. SKY WAY DR., Highway 270. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C475-D7-SF-CH3).

Shawnee, Okla. STARLIGHT DR., Highway 18. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C483-D7-SF-CH3).

Tulsa, Okla. APACHE DR., Harvard and Apache Sts. Exec: L. E. Snyder, Apache Drive-In Theatre. (M8-C350-D7-SF-CH3).

Tulsa, Okla. RIVERSIDE, 71st Street, South Tulsa. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C602-D7-SF-CH3).

Tulsa, Okla. SIXTY-SIX DR., Highway 66. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C560-D7-SF-CH3).

Tulsa, Okla. SKYLINE DR., Cincinnati Street. Exec: (GRIF) Henry Gritting, Griffith Theatres. (M8-C600-D7-DF-CH3).

OMAHA TERRITORY

Iowa

Sioux City, Iowa. DRIVE-IN, Highway 75. Exec: (TRI)) A. H. Blank, Tri-States Theatre Corp. (M6-C600-D7-SF-CH3).

Nebraska

Lincoln, Nebr. STAR VIEW OUTDDOR, Vine Street near 48th Street. Exec: Morris Schweitzer, Star View Amusement Corp. (M6-C600-D7-SF-CH3).

Omaha, Nebr. DRIVE-IN, 79th and Dodge Sts. Exec: (TRI) A. H. Blank, Tri-States Theatre Corp. (M6-C650-D7-SF-CH3).

PHILADELPHIA TERRITORY

New Jersey

Camden, N. J. GARDEN STATE DR. (Route 40). Exec: (VICT) Sam Varbalow, Savar Amusement Corp. (M8-C729-D7-SF-CH3).

Gloucester Heights, N. J. STARLIGHT DR. (Route 45 and Nicholson St.). Exec: Hollingshead and Smith. (M8-C950-D7-ASDF-CH3).

Pennsylvania

Alderson, Pa. HANSON DR., Harveys Lake. Exec: Vincent M. Tate, Beaver Enterprises. (M6-C250-D7-SF-CH4).

Alderson, Pa. SANDY BEACH, Harveys Lake. Exec: Sam Slomowitz, Sandy Beach Drive-In Theatre and Amusement Centre. (M6-C400-D7-SF-CH4).

Berlinsville, Pa. BERLINSVILLE DR., P. O. (Route 2). Exec: William Beck. (M7-C300-D7-SF-CH4).

Drums, Pa. HAZLETON DR., Highway 309. Exec: J. P. Slovak, Beaver Enterprises, Inc. (M7-C400-D7-SF-CH4).

Milton, Pa. VETERANS FOREIGN WARS, Milton Island. Exec: Jacob Brown, Veterans of Foreign Wars Home Association. (M6-C300-D6-SF-CH3).

Mountain Top, Pa. SUNSET DR., Hazleton Highway. Exec: Vincent Novinski and Associates. (M6-C190-D7-SF-CH4).

Newton Lake, Pa. IDEAL DR., 6 mi. from Carbondale, Pa. Exec: Vincent M. Tate, Cerra Bottling Works. (M6-C400-D7-SF-CH4).

Philadelphia, Pa. LINCOLN DR., Roosevelt Blvd. Exec: (FABH) Neil Hellman, Fabian-Hellman Circuit. (M8-C925-D7-ASDF-CH4).

Thomasville, Pa. LINCOLN, R. D. 1. Exec: H. J. Halliwell, Halsmithorn Enterprises, Inc. (M6-C300-D7-SF-CH4).

Tunkhannock, Pa. STAR LITE, Eatonville. Exec: Ray Best, Best and Sands. (M8-C200-D6-SF-CH3).

PITTSBURGH TERRITORY

Pennsylvania

Altoona, Pa. ALTOONA DR. (Route 36). Exec: (BLATT) William J. Blatt, Blatt Brothers Theatres. (M6-C700-D7-ASDF-CH4).

Beaver Falls, Pa. HI WAY 51 (Route 51). Exec: John Wincek, Wincek and Tate. (M6-C500-D7-ASDF-CH4).

Beaver Falls, Pa. SPOTLIGHT 88 DR. (Route 88). Exec: Ralph Felton, Spotlight Theatres, Inc. (M8-C500-D7-ASDF-CH4).

Belle Vernon, Pa. SUPER 71 DR. (Routes 71 and 711). Exec: Theodore Grance, Auto Theatres, Inc. (M6-C700-D7-ASDF-CH3).

Braddocks Grave. SUNDAY DR. (Route 40). Exec:*. (M6-C250-D6-SF-CH3).

Bridgeville, Pa. SUPER 28 DR. (Route 28). Exec: John Ridilla, Auto Theatres, Inc. (M*-C422-D7-SF-CH*).

Butler, Pa. BUTLER DR. (Route 68). Exec: A. B. Caldwell, Jr., Caldwell, Schultz and Herric. (M8-C350-D6-ASDF-CH4).

Butler, Pa. GEIBELS DR. (Route 68). Exec: J. Geibels. (M5-C200-D6-SF-CH3).

Claysville, Pa. SUNSET BEACH AUTO (Route 40). Exec: C. M. Ducray, C. M. Ducray and S. Setto. (M8-C300-D7-ASDF-CH4).

Cranberry, Pa. SKI HI (Routes 322 and 257). Exec: (KAYT) Ray Woodard, Kayton Amusement Co. (M6-C432-D7-ASDF-CH4).

Erie, Pa. SKYWAY (Route 5). Exec: Carl Guerrein. (M8-C550-D7-ASDF-CH4).

Erie, Pa. STAR (Route 5). Exec: J. Gold, Gold and Colman. (M8-C572-D7-ASDF-CH4).

Fairchance. YORK RUN OPEN AIR (Route 119). Exec: Steve Danko, Danko, Sharpe and Dugan. (M8-C300-D7-ASDF-CH4).

Grove City, Pa. LARKFIELD DR. (Route 78). Exec: Chester De Marsh, William and Chester De Marsh. (M8-C350-D6-ASDF-CH4).

Imperial, Pa. PENN LINCOLN DR. (Routes 22 and 30). Exec: Paul Trunick, Penn Lincoln Drive-In, Inc. (M8-C350-D7-ASDF-CH4).

Irwin, Pa. SUPER 30 DR. (Route 30). Exec: Theodore Grance, Outdoor Theatres, Inc. (M6-C700-D7-ASDF-CH4).

Kittanning, Pa. COMMUNITY (Route 422). Exec: Ernest Stern, Community Drive-In Theatre, Inc. (M6-C300-D7-ASDF-CH4).

Lemont Furnace. STAR LITE DR. (Route 119). Exec: Ted Laskey, Laskey Amusement Co. (M6-C500-D7-SF-CH3).

Manifold, Pa. ROUTE 19 DR. (Route 19). Exec: Gene Basle. (M7-C500-D7-SF-CH3).

McKeesport, Pa. RAINBOW GARDENS DR., Lincoln Way and Route 88. Exec: Joseph Volpe.(M6-C300-D7-ASDF-CH4).

Meadville, Pa. AIRWAY DR. (Route 19). Exec: Edward F. Dodge. (M6-C385-D7-ASDF-CH4).

New Castle, Pa. SKYLINE DR. (Route 224). Exec: Mitchell Kwiatkowski, New Castle Skyline Drive-In, Inc. (M7-C300-D7-ASDF-CH4).

New Castle, Pa. SUPER CASTLE (Route 422). Exec: Theodore Grance, Outdoor Theatres, Inc. (M6-C760-D7-ASDF-CH4).

New Kensington, Pa. FAMILY DR. (Route 56). Exec: Henry Rolnick, Family Drive-In Theatre, Inc. (M6-C680-D7-ASDF-CH5).

Pittsburgh, Pa. SOUTH PARK (Route 88). Exec: Ernest Stern, Norbert and Ernest Stern. (M8-C400-D7-ASDF-CH4).

Scottdale, Pa. RUTHORN DR., Pleasant Rd. Exec: Donald J. Ruth, Ruthorn Enterprises. (M6-C300-D7-ASDF-CH4).

Seward, Pa. LAUREL HILL DR. (Route 56). Exec: Walter F. Litzinger. (M6-C275-D7-SF-CH3).

Sewickley, Pa. BROOKSIDE DR., Warrendale Rd. Exec: R. W. Thomson, Jr., Thomson and Marr. (M6-C400-D7-ASDF-CH4).

Sharon, Pa. HICKORY DR. (Route 62). Exec: Peter L. Patti, Open Air Amusement, Inc. (M8-C650-D7-ASDF-CH4).

St. Mary's, Pa. FAIRVIEW DR. (Route 255). Exec: Joseph A. Farrell, View Theatre Co. (M6-C400-D7-ASDF-CH4).

Transfer, Pa. REYNOLDS DR., Greenville Rd. (Route 18). Exec: Carl McKnight, McKnight and Blake. (M6-C400-D7-ASDF-CH4).

Turtle Creek, Pa. PITTSBURGH (Route 22). Exec: (DRTM) Ben Wachnansy. (M7-C850-D7-ASDF-CH4).

Uniontown, Pa. SMELL, McClellandtown Rd. (Route 21). Exec: M. V. Smell, Smell Brothers. (M6-C250-D7-SF-CH3).

Waterford, Pa. SUNSET (Route 97). Exec: Ray Woodard, A. Phelps, E. Wilson and Woodard. (M6-C350-D7-ASDF-CH4).

W. Brownsville, Pa. CUPPIES (Route 40). Exec: Mrs. Betty Wilson, A. Phelps, E. Wilson and R. Woodard. (M8-C450-D7-ASDF-CH4).

West Virginia

Clarksburg, W. Va. WARNER SKYLINE DR. (Route 19). Exec: C. A. Warner. (M6-C400-D7-SF-CH4).

Elkins, W. Va. ELKINS (Route 33). Exec: Bretsel Lang and Harold Talbott. (M6-C250-D7-ASDF-CH4).

Meadowbrook, W. Va. SUNSET (Route 19). Exec: (SILAY) Alex Silay, Alex Silay and Steve Medve, Jr. (M8-C400-D7-ASDF-CH4).

Metz, W. Va. WILSON DR. (Route 250). Exec: E. C. Wilson. (M6-C150-D7-SF-CH3).

Morgantown, W. Va. BUNKER HILL, Fairmont Rd. (Route 19). Exec: Orville Pauley. (M6-C90-D7-ASDF-CH4).

PORTLAND TERRITORY

Oregon

Eugene, Ore. EUGENE DR., 2860 South Willamette St. Exec: (UNITE) William R. Forman, Outdoor Theatres, Inc. (M12-C600-D7-ASDF-CH3).

Pendleton, Ore. PENDLETON MOTOR-IN. Exec: Steveson and Anderson, Pendletons Motor-In Theatre Co. (M12-C300-D7-ASDF-CH3).

*Is substituted whenever any data is not yet recorded or available.



THE GARDEN STATE, CAMDEN, NEW JERSEY, displays its advantageous location in this aerial photo. The theatre is adjacent to three highways.

Portland, Ore. AMPHITHEATRE, 9727 Northeast Union Ave. Exec: B. R. Keller, Amphitheatres, Inc.
(M12-C500-D7-SF-CH3).

Portland, Ore. 82ND STREET DR., 9600 Southeast 82nd St. Exec: (UNITE) William R. Forman, Outdoor Theatres, Inc.
(M12-C800-D7-ASDF-CH3).

Salem, Ore. SALEM DR. (Route 3). Exec: (UNITE) William R. Forman, Outdoor Theatres, Inc.
(M12-C600-D7-ASDF-CH3).

ST. LOUIS TERRITORY

Illinois

Carbondale, Ill. WARING AUTO (Route 144). Exec: W. E. Waring, Jr., Waring Amusement Co. (M7-C500-D7-SF-CH3).

East St. Louis. DRIVE-IN (Routes 50 and 157). Exec: (PUBL) J. P. Dromey, Publix Great States Theatres, Inc.
(M7-C500-D7-SF-CH3).

Herrin, Ill. EGYPTIAN DR., Highway 148. Exec: Wayne Smith.
(M8-C375-D7-SF-CH4).

Highland, Ill. AIR PARK (Route 40). Exec: Joseph Schremp.
(M7-C292-D7-SF-CH2).

Springfield, Ill. DRIVE-IN, Highway 66. Exec: Joseph N. Sikes, Springfield Drive-In Theatre Corp.
(M7-C900-D7-SF-CH3).

Tamaroa, Ill. MELODY DR., Highway 51. Exec: (GLENN) Frank J. Glenn.
(M7-C250-D7-SF-CH3).

Kentucky

Kevil, Ky. PARK DR. (Route 1). Exec: H. J. Shelby. (M7-C2252-D6-SF-CH3).

Missouri

Afton, Mo. RONNIES DR., Lindberg Blvd. Exec: (WEHR) Fred Wehrenberg, Fred Wehrenberg Circuit.
(M7-C600-D7-SF-CH3).

Des Peres, Mo. DRIVE-IN, Highway 50. Exec: (MIDWST) Phillip Smith, Drive-In Theatre Corp. of St. Louis.
(M7-C500-D7-ASDF-CH3).

St. Ann's Village, Mo. AIRWAY (Route 40). Exec: (HALL) Henry Halloway Theatres. (M-8C*-D*-ASDF-CH*).

St. Louis Co., Mo. 66 PARK-IN, Highway 66 and Sappington Rd.: Exec: (WEHR) Fred Wehrenberg, Fred Wehrenberg Circuit. (M7-C798-D7-SF-CH3).

SALT LAKE CITY TERRITORY

Idaho

Boise, Idaho. BOISE DR., Highway 30. Exec: J. W. Naylor, Boise Drive-In.
(M6-C300-D7-ASDF-CH3).

Burley, Idaho. ALFRESCO DR., 2 Miles North of Burley. Exec: (HAVO) I. H. Harris, Harris Voeller Theatres, Inc.
(M6-C350-D7-SF-CH4).

Caldwell, Idaho. SKYLITE DR. Exec: J. F. Knuth, Skylite Drive-In Co.
(M6-C250-D7-DF-CH3).

Coeur D'Alene, Idaho. SHOW BOAT DR., 2 Miles Northeast of Coeur D'Alene. Exec: Oscar Paisley.
(M6-C400-D7-SF-CH3).

Idaho Falls, Idaho. IDAHO FALLS MOTOR VU DR., Yellowstone Highway 191. Exec: H. Jorgenson, H. Jorgenson and J. H. Moran. (M6-C550-D7-ASDF-CH3).

Jerome, Idaho. JEROME AUTO, Elm and North Boulevard. Exec: R. L. Tweedy, Jerome Auto Theatre.
(M6-C210-D7-SF-CH4).

Meridian, Idaho. K AND K DR. Exec: J. F. Knuth, K and K Drive-In.
(M6-C400-D7-ASDF-CH4).

Nampa, Idaho. NAMPA-CALDWELL DR., Highway 30. Exec: L. E. Jewell, Nampa-Caldwell Drive-In.
(M6-C350-D7-SF-CH4).

Payette, Idaho. K AND K DR. Exec: J. F. Knuth, K and K Drive-In.
(M6-C400-D7-ASDF-CH4).

Pocatello, Idaho. POCATELLO DR., Highway 91. Exec: Tulles Brothers, Pocatello Drive-In.
(M6-C250-D7-ASDF-CH3).

Rupert, Idaho. FAMILY DR., 1 Mile Southwest of Rupert. Exec: Burgess Crandall, Family Drive-In.
(M6-C100-D7-SF-CH3).

Twin Falls, Idaho, Idaho. MOTOR VU DR., Kimberly Rd. Exec: (ASSO) S. L. Gillette, Associated Amusement Co.
(M6-C560-D7-ASDF-CH4).

Montana

Billings, Mont. BILLINGS MOTOR VU, 1 Mile West of Billings. Exec: J. H. Moran, Billings Motor Vu.
(M6-C650-D7-SF-CH4).

Missoula, Mont. MT. VU MOTOR-IN, 1 Mile West of Missoula. Exec: B. J. Barrett, Mt. Vu Motor-In Corp.
(M6-C400-D7-ASDF-CH3).

Utah

Bountiful, Utah. BOUNTIFUL MOTOR VIEW DR., Highway 91. Exec: J. N. Bills, Bountiful Motor View Drive-In.
(M6-C650-D7-ASDF-CH3).

Logan, Utah. LOGAN DR., Highway 91. Exec: Elmer Brown, Logan Drive-In.
(M6-C300-D7-SF-CH3).

Ogden, Utah. MT. OGDEN DR., 3700 Wall Ave. Exec: M. R. Stephens, M. R. and D. W. Stephens.
(M6-C300-D7-SF-CH4).

Orem, Utah. GENEVA DR., Highway 91. Exec: Veigh Cummings, Geneva Drive-In Co. (M6-C624-D7-SF-CH3).

Provo, Utah. PIONEER DR., Highway 91. Exec: (ASSO) S. L. Gillette, Associated Amusement Co.
(M6-C600-D7-ASDF-CH4).

Richfield, Utah. SKYLINE DR., 4 Blocks West of Main. Exec: Alvie Peterson, Skyline Drive-In.
(M6-C250-D7-ASDF-CH3).

Riverdale, Utah. WEBER MOTOR VU (Route 4). Exec: (ASSO) S. L. Gillette, Associated Amusement Co.
(M6-C785-D7-ASDF-CH4).

Roy, Utah. RIVERDALE DR. Exec: J. W. Naylor and R. Tulles, Riverdale Drive-In. (M6-C400-D7-ASDF-CH3).

Salt Lake City, Utah. AIRPORT DR., 2700 West North Temple. Exec: Ray F. Wilmart, Airport Drive-In.
(M6-C300-D7-ASDF-CH3).

Salt Lake City, Utah. AUTORIUM DR., 2nd West and 21st South. Exec: C. E. Alsop, Autorium Drive-In.
(M6-C500-D7-ASDF-CH3).

Salt Lake City, Utah. HYLAND DR., 3670 Highland Drive. Exec: G. P. Wright, Hyland Drive-In.
(M6-C600-D7-SF-CH3).

South Lake City, Utah. MOTOR-VU DR., 35th East and 33rd South. Exec: Erick Peterson, Motor Vu Drive-In.
(M6-C700-D7-SF-CH3).

SAN FRANCISCO TERRITORY

California

Belmont, Calif. STARLITE DR., Harbor Blvd. Exec: Thornton Howell, Belmont Drive-In Theatre Co.
(M12-C638-D7-ASDF-CH3).

Boulder Creek. STARVIEW DR., Big Basin Highway. Exec: John Forde, Starview Drive-In Theatre, Inc.
(M8-C375-D7-DF-CH3).

Concord, Calif. MOTOR-IN, Sherman Field. Exec: (AFFI) Robert L. Lippert, Contra Costa Motor-In Theatres.
(M12-C500-D7-ASDF-CH3).

Cotati, Calif. REDWOOD DR., Highway 101. Exec: D. G. Burnette, Redwood Drive-In Theatre, Inc.
(M10-C575-D7-DF-CH3).

Hayward, Calif. MOTOR MOVIES, Tennyson Rd. Exec: Reed Hauslacb, Motor Theatres, Inc.
(M12-C500-D7-ASDF-CH3).

Malaga, Calif. MOTOR-IN, Highway 99. Exec: (AFFI) Robert L. Lippert. Fresno Motor-In Theatres, Inc.
(M12-C907-D7-ASDF-CH3).

Palo Alto, Calif. PENINSULA DR. Bayshore Highway and Amarillo Rd. Exec: (MEEK) Guy W. Meek, Western Drive-In Theatre, Inc.
(M12-C550-D7-DF-CH3).

Pittsburg, Calif. AUTO MOVIES, Old Antioch Rd. Exec: Sylvester Enea, Auto Movies Theatres, Inc.
(M12-C550-D7-ASDF-CH4).

Salida, Calif. MOTOR-IN, Highway 99. Exec: (AFFI) Robert L. Lippert, Stanislaus Motor-In, Inc.
(M12-C443-D7-ASDF-CH3).

Salinas, Calif. AUTO MOVIES, East Market and Simas Streets. Exec: Sylvester Enea, Auto Movies Theatres, Inc.
(M12-C500-D7-ASDF-CH4).

Salinas, Calif. SKYVIEW DR., Sanborn Rd. Exec: Antone Martines.
(M12-C560-D7-DF-CH3).

San Jose, Calif. SAN JOSE DR., Gish Rd. and Oakland, Highway 17. Exec: (MEEK) Guy W. Meek, Western Drive-In Theatres, Inc.
(M12-C550-D7-DF-CH3).

San Leandro, Calif. OAKLAND DR., 15065 East 14th Street. Exec: (MEEK) Guy W. Meek, Western Drive-In Theatres, Inc. (M12-C565-D7-DF-CH3).

San Leandro, Calif. STADIUM AUTO Movies, 15501 East 14th Street. Exec: (GOLD) M. A. Naify, Golden State Theatres and Realty Corp.
(M12-C818-D7-ASDF-CH3).

San Rafael, Calif. MARIN MOTOR MOVIES, San Quentin Rd. Exec: (BLUM) Joe Blumenfeld, Blumenfeld Enterprises, Inc.
(M12-C600-D7-ASDF-CH4).

Stateline, Calif. TAHOE THEATRE DR. Highway 40. Exec: (WEST) Gerald Hardy, Westland Theatres.
(M6-C250-D7-DF-CH3).

Stockton, Calif. STOCKTON MOTOR MOVIES, Clayton Ave. and Highway 50. Exec: (BLUM) Joe Blumenfeld, Blumenfeld Enterprises, Inc.
(M12-C880-D7-ASDF-CH3).

Vallejo, Calif. CRESCENT DR., County Rd. off Highway 29. Exec: (MEEK) M. C. Mayo, Vallejo Drive-In Theatre, Inc.
(M12-C575-D7-DF-CH3).

Visalia, Calif. MOTOR-IN, Mooney Park Rd. Exec: (AFFI) Robert L. Lippert, San Joaquin Motor-In, Inc.
(M12-C425-D7-ASDF-CH3).

W. Sacramento, Calif. DRIVE-IN, Highway 40. Exec: (BLUM) Joe Blumenfeld, Blumenfeld Enterprises, Inc.
(M12-C780-D7-ASDF-CH3).

Nevada

Reno, Nev. MIDWAY DR., Highway 395 and South Virginia Rd. Exec: (MIDENT) Fred C. Bernard (Freedom), Midway Enterprises, Inc.
(M5-C250-D7-ASDF-CH3).

SEATTLE TERRITORY

Idaho

Lewiston, Idaho. AUTO-VUE, Highway 410. Exec: (LIB) Mildred Wall, Liberty Theatre Corp.
(M7-C450-D7-ASDF-CH3).

Washington

Alderwood Manor, Wash. SNO KING, Highway 99. Exec: C. J. Rockey, Sno King Theatres, Inc.
(M7-C650-D7-ASDF-CH3).

Bellingham, Wash. MOTOR-VUE, Highway 99. Exec: Larson and Gillette.
(M7-C450-D7-ASDF-CH3).

Kennewick, Wash. HI LAND, Highway 410. Exec: (ALLI) W. E. Gregory, Midstate Amusement Co.
(M7-C600-D7-ASDF-CH3).

Kennewick, Wash. Y PARK-IN, Highway 410. Exec: (HIGG) F. M. Higgins, Higgins Amusement Co.
(M7-C350-D7-ASDF-CH3).

Midway, Wash. MIDWAY MOTOR-IN, Highway 99. Exec: (JOHN) Ed Johnson, Johnson and Spracher.
(M12-C500-D7-ASDF-CH3).

Millwood, Wash. MOTOR-IN, Highway 53. Exec: (SNOQ) W. K. Bechwith, Motor-In Theatre.
(M6-C600-D7-ASDF-CH3).

Seattle, Wash. AURORA MOTOR-IN, Highway 99, 13500 Aurora Ave. Exec: (JOHN) Dwight Spracher, Aurora Motor-In Theatres.
(M12-C500-D7-ASDF-CH3).

Seattle, Wash. DUWAMISH, Highway 99. Exec: (UNITE) William Forman, United Theatres, Inc.
(M8-C600-D7-ASDF-CH3).

Spokane, Wash. AUTO VIEW, Highway 195. Exec: C. Young, Auto View Drive-In Theatre. (M6-C400-D7-ASDF-CH3).

Tacoma, Wash. AUTO VIEW MCCHORD FIELD, Highway 99. Exec: (UNITE) William Forman, United Theatres, Inc. (M8-C500-D7-ASDF-CH3).

Tacoma, Wash. STAR LIGHT, Highway 99. Exec: Nilsson and Theurkauf.
(M8-C500-D7-ASDF-CH3).

Union Gap, Wash. TOWER DR., Highway 97. Exec: (FIRST) Fred Mercy, Jr., First National Theatres, Inc.
(M7-C650-D7-ASDF-CH3).

Walla Walla, Wash. SKY-VUE, Highway 410. Exec: (ALLI) W. E. Gregory, Midstate Amusement Co.
(M7-C400-D7-ASDF-CH3).

Wenatchee, Wash. AUTO-VUE, Highway 10. Exec: (GRIE) Charles Grieme, Grieme and Fashken, Inc.
(M6-C250-D7-ASDF-CH3).

WASHINGTON TERRITORY

Maryland

Baltimore, Md. NORTH POINT DR., North Point and Battle Grove Rds. Exec: (DURK) Frank H. Durkee, Jr., North Point Corp. (M6-C650-D7-DF-CH3).

Belstville, Md. SIDNEY LUST DR. (Route 1). Exec: (LUST) Sidney Lust, B and S Theatre Corp.
(M8-C600-D7-ASDF-CH3).

*Is substituted whenever any data is not yet recorded or available.

VAN NUYS, VAN NUYS, CALIFORNIA, has a strikingly modern mural name sign and attraction board that dominates the surrounding area.



Cresaptown, Md. POTOMAC DR. (Route 53). Exec: Kenneth R. Baker, K. R. Baker and G. R. Sutherland. (M9-C450-D7-ASDF-CH4).

Glenburnie, Md. GOVERNOR RITCHIE DR. (Route 301 and Governor Ritchie Hy.). Exec: (LOEW) E. M. Loew, E. M. Loew Theatres. (M7-C500-D7-DF-CH2).

Virginia

Alexandria, Va. MT. VERNON OPEN AIR (Route 1). Exec: (LOEW) E. M. Loew, E. M. Loew Theatres. (M7-C500-D7-DF-CH2).

Arlington, Va. AIRPORT DR., 2001 Jefferson Davis Highway. Exec: Paul J. Foley, Foley Corp. (M9-C1000-D7-SF-CH3).

Cismont, Va. SEVEN PINES DR., Highway 231 (Portable). Exec: J. G. Pugh. (M7-C150-D7-SF-CH5).

Dublin, Va. PULASKI DR. (Route 11). Exec: Earl B. Faw. (M8-C180-D7-ASDF-CH4).

Galax, Va. MIDWAY DR., Highway 221. Exec: R. F. Jones. (M8-C300-D7-ASDF-CH5).

Louisa, Va. HOLTS OPEN AIR (Route 5) (Portable). John Holt. (M7-C40-D7-SF-CH6).

Martinsville, Va. MARTINSVILLE DR., Highway 220. Exec: W. A. Davis, F. B. Davis and S. B. Terry. (M8-C300-D7-ASDF-CH5).

McLure, Va. LEE OPEN AIR (Route 64). Exec: Earl Mullins, Lee Open Air Theatre. (M7-C80-D7-ASDF-CH4).

Newport News, Va. GREEN ACRES, 39th St. and Aberdeen Rd. Exec: R. W. Saunders, Peninsula Amusement Corp. (M7-C500-D7-ASDF-CH4).

Norfolk, Va. NORFOLK DR., Virginia Beach Blvd. (Route 58). Exec: (FAB) L. R. Golding, Princess Anne Drive-In Corp. (M8-C800-D7-SF-CH4).

Norfolk, Va. WILDERS DR., Little Creek Rd. Exec: (WILD) Mrs. A. B. Wilder, Wilder Enterprises, Inc. (M10-C650-D7-ASDF-CH4).

Port Richmond, Va. WEST POINT DR. (Route 30). Exec: J. B. Cowles and Montague Pilcher, West Point Theatres, Inc. (M9-C350-D7-ASDF-CH4).

Radford, Va. HI WAY DR. (Route 11). Exec: Harold Kotzin, Hi Way Theatre, Inc. (M10-C416-D7-ASDF-CH5).

Richmond, Va. BELLWOOD DR. (Route 1). Exec: (FAB) Morton G. Thalhimer, Petersburg Pike Drive-In Corp. (M10-C1040-D7-SF-CH4).

Richmond, Va. BROADWAY OPEN AIR, 4116 Grove Ave. Exec: J. H. Groh, Broadway Open Air Theatres, Inc. (M10-C560-D7-SF-CH5).

Richmond, Va. MIDLOTHIAN DR. (Route 60). Exec: Earl L. Noble, Virginia Drive-In Theatres, Inc. (M9-C350-D7-SF-CH4).

Roanoke, Va. LEE HI DR. (Route 11). Exec: John R. Francis, Public Entertainment, Inc. (M8-C600-D7-ASDF-CH4).

South Boston, Va. MOONLIGHT DR. (Route 58). Exec: A. Hugh Vaughan, Moonlight Drive-In Theatre. (M8-C300-D7-SF-CH4).

Stony Creek, Va. STONY CREEK DR. (Route 301). Exec: Allen C. Fisk. (M8-C175-D7-ASDF-CH4).

Tabb, Va. YORK DR. (Route 17). Exec: M. V. Hogge, M. V. Hogge and J. H. Presson. (M7-C270-D7-SF-CH4).

Williamsburg, Va. STOCKADE AUTOTORIUM, Richmond Rd. Exec: Cecil S. Houck, Stockade Theatre Co. (M8-C240-D7-SF-CH5).

Winchester, Va. WINCHESTER DR., Siler Star Route. Exec: Ray J. Becker, Winchester Drive-In Theatre. (M9-C450-D7-ASDF-CH4).

Windsor, Va. WINDSOR DR. (Route 460) (Portable). Exec: M. A. Watson. (M9-C100-D7-SF-CH7).

Wise, Va. MULLINS OPENAIR (Route 23). Exec: Earl B. Mullins, Mullins Open Air Theatre. (M7-C75-D7-ASDF-CH4).

DRIVE-IN THEATRES UNDER CONSTRUCTION

NOTE: Following is a listing by exchange territories of all announced new drive-in theatre construction as of October, 1948. Some of these theatres have been finished and opened before presstime, even to the extent of being pictured in this volume. However as their totals would affect the major MPA survey of which they are a part, they are being listed separately. In future listings, those which open during the intervening year will be added in their proper place; and such a listing of incompleted theatres will be continued until the building boom ends.

ATLANTA TERRITORY

Alabama

Birmingham, Ala. FAIR PARK DR., Highway 31. Exec: (WATER) N. H. Waters, Waters Theatre Co.

Oxford, Ala. SKYWAY DR., Highway 11. Exec: J. E. Aaron.

Georgia

Atlanta, Ga. DRIVE-IN, Moreland Avenue. Exec: (EAPT) Fred Coleman, East Point Amusement Co.

Brunswick, Ga. HIWAY DR., Highway 17 (Portable). Exec: High Smith and Mike.

La Grange, Ga. DRIVE-IN, Highway 29. Exec: (LAM) O. C. Lam, Lam Amusement Co.

Rome, Ga. DRIVE-IN, Highway 27 and Cave Spring Road. Exec: (LAM) O. C. Lam, Lam Amusement Co.

Tennessee

Nashville, Tenn. CRESCENT DR., Murfreesboro Pike. Exec: (CRES) Kermit Stengel, Crescent Amusement Co.

BOSTON TERRITORY

Massachusetts

Dedham, Mass. DRIVE-IN (Route 1). Exec: Mickail Redstone, Dedham Drive-In Theatre.

Lanesboro, Mass. SUNSET PARK AUTO (Route 7). Exec: Fred Cloutier, Sunset Park Auto Theatre, Inc.

Northfield, Mass. NORTHFIELD COMMUNITY DR. (Route 63). Exec: (NIL) Carl Nilman, Northfield Community Drive-In.

W. Springfield, Mass. SPRINGFIELD AUTO (Route 20). Exec: (DRTC) Thomas De Maura, Springfield Auto Theatre, Inc.

New Hampshire

Brentwood, N. H. BRENTWOOD AUTO (Route 125). Exec: John W. Luce, Luce Amusement Co.

Winchester, N. H. OPEN AIR, Daniel Webster Highway. Exec: (NIL) Carl Nilman, Northfield Community Drive-In Co.

Rhode Island

Cranston, R. I. CRANSTON AUTO, Oaklawn Avenue. Exec: Myer Stangler, Columbia Corp.

BUFFALO TERRITORY

New York

Tonawanda, N. Y. DELAWARE DR., 4100 Delaware Avenue. Exec: Louis Drew, Delaware Drive-In Theatre Corp.

CHARLOTTE TERRITORY

North Carolina

Wilson, N. C. DRIVE-IN, Highway 117. Exec: Nathan Suraci.

South Carolina

Anderson, S. C. DRIVE-IN (Route 29). Exec: (WILBK) H. F. Kincey, Wilby-Kincey Service Corp.

Chesterfield, S. C. CHESTERFIELD DR., Highway 9 (Portable). Exec: Owen Leviner.

Greenville, S. C. DRIVE-IN, Highway 276. Exec: S. J. Workman.

Greenville, S. C. DRIVE-IN, Highway 276. Exec: (WILBK) H. F. Kincey, Wilby-Kincey Service Corp.

Newberry, S. C. DRIVE-IN, Highway 176 (Portable). Exec: Albert Roof and C. K. Brown.

CHICAGO TERRITORY

Illinois

Champaign, Ill. TWIN CITY DR., North Market Street Rd. Exec: J. Barr, Twin City Drive-In Theatre Corp.

Chicago, Ill. STARLIGHT, 95th and Ridgeland. Exec: (ESSA) Edwin Silverman, Essaness Circuit.

Peoria, Ill. BELLEVUE DR. (Route 116). Exec: Abner Klein, General Drive-In Theatre Corp.

Michigan

Niles, Mich. NILES OUT DOOR, Two Miles South of Niles. Exec: (MANTA) Jack Rose, Niles Out Door Theatres, Inc.

CINCINNATI TERRITORY

Kentucky

Lexington, Ky. THOROBRED DR. (Route 27). Exec: Mark Cummins, Thorobred Drive-In, Inc.

Ohio

Cincinnati, O. DRIVE-IN, Reading Rd. Exec: Rube Shor.

Columbus, O. MILES EAST MAIN, 5000 East Main St. Exec: Mrs. Ethel Miles.

Portsmouth, O. DRIVE-IN, Route 52. Exec: Barton Cook and Ed Payne, Barton Cook and Ed Payne, Inc.

West Virginia

Bluefield, W. Va. SKYWAY DR. (Route 52). Exec: S. J. Switow, Appalachian Amusement Co.

Mt. Hope, W. Va. MOUNTAINEER DR. (Routes 19 and 21). Exec: Bill Patterson.

CLEVELAND TERRITORY

Ohio

Akron, O. SAWYER-WOOD DR. (Route 224). Exec: J. Ramicone.

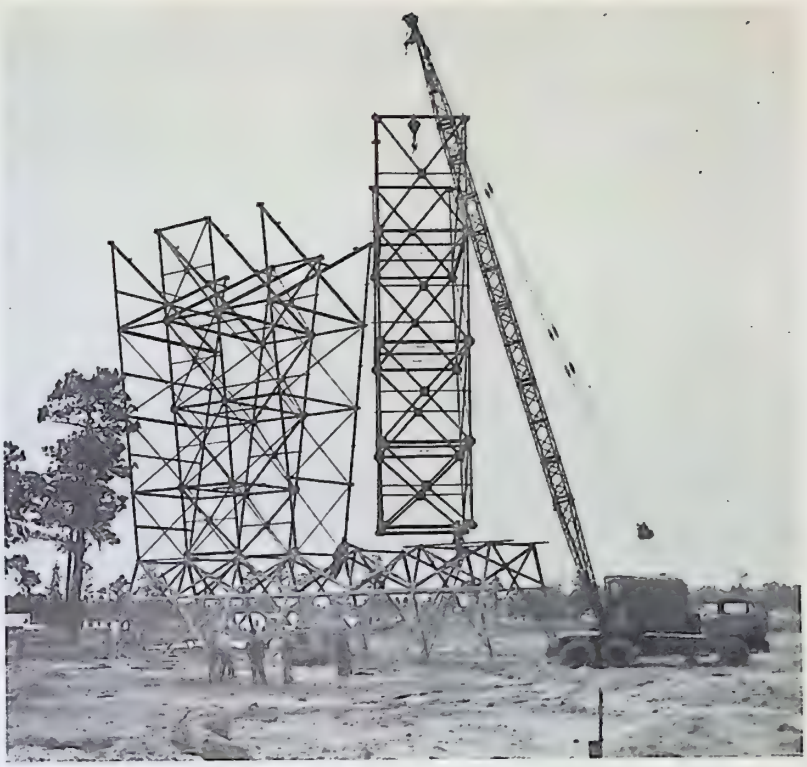
Bellefontaine, O. DRIVE-IN (Route 68). Exec: Dale Elleman.

Wickliffe, O. WICKLIFFE DR. (Route 2). Exec: Horace Abrams.

DALLAS TERRITORY

Texas

La Grange, Texas. SKI HI DR., Highway 77. Exec: C. H. Bronson, Sky Hi Drive-In.



ABOVE. A MOBILE CRANE hoists six tons of structural steel as the 62-foot, hurricane-proof tower for the 1500 car Normandy Twin Theatre screen rises in Jacksonville, Florida. The screens will be 45 by 47 feet and projection booths will be 468 feet from the screens. Below, ramp grading equipment such as this is now busy readying hundreds of new theatres all over the country for spring openings.



Waco, Texas. WESTVIEW DR., Highway 6. Exec: Ed Newman, Central Texas Theatres, Inc.

Weatherford, Texas. JONES DR., Highway 180. Exec: C. H. Jones, Jones Drive-In.

DENVER TERRITORY

Colorado

Greeley, Colo. DRIVE-IN, Highway 34. Exec: Emmett Savard.

La Junta, Colo. DRIVE-IN, Highway 50. Exec: C. M. Alderson and Wayne Barton.

INDIANAPOLIS TERRITORY

Kentucky

Bardstown, Ky. DRIVE-IN, Highway 31E. Exec: (CAMP) Hahn and Barnett, Bardstown Drive-In Theatre Co.

LOS ANGELES TERRITORY

Arizona

Yuma, Ariz. MESA DR., West of Highway 80 at 26th St. Exec: W. P. Wickersham.

California

El Centro, Calif. MOTOR-VU DR., Highway 99. Exec: (ASSO) S. L. Gillette, Associated Amusement Co., Inc.

Highland, Calif. BASE LINE DR., 1785 Base Line. Exec: Harry Dickerman, Highland Theatre Co.

Long Beach, Calif. LAKEWOOD DR., Carson St. and Cherry Ave. Exec: (CALIF) Charles Caballero, Pacific Drive-In Theatres, Inc.

National City, Calif. HARBOR DR., 31st St. and National Ave. Exec: T. P. Huntington, Harbor Drive-In Theatre, Inc.

Oceanside, Calif. OCEANSIDE DR., Fallbrook Rd. Exec: (MIDENT) Joseph Shure, Shure Theatres Corp.

Riverside, Calif. DRIVE-IN, Magnolia Blvd. Exec: A. G. Mitzel, Motor-In Drive-In Co.

Riverside, Calif. RUBIDOUX DR., Opal and Mission Blvds. Exec: R. C. Hunt, Hunts Theatres, Ltd.

San Bernardino, Calif. MOUNT VERNON MOTOR-IN, 632 Mt. Vernon. Exec: A. G. Mitzel, Mt. Vernon Motor-In Theatres, Inc.

San Diego, Calif. CAMPUS DR., 6147 El Cajon Blvd. Exec: Sam J. Russo, Campus Drive-In Corp.

Van Nuys, Calif. VAN NUYS DR., Roscoe Blvd. Exec: (CALIF) Charles Caballero, Pacific Drive-In Theatres, Inc.

MILWAUKEE TERRITORY

Wisconsin

Racine, Wis. MID-CITY OUTDOOR, Highway 42 and Berryville Rd. Exec: (STAN) L. F. Gran, Standard Theatres Management.

MINNEAPOLIS TERRITORY

Minnesota

Duluth, Minn. DRIVE-IN, Highway 53. Exec: Ted Man and Charles Rubenstein.

South Dakota

Sioux Falls, S. Dak. EAST PARK DR. Exec: H. E. Hanson, Drive-In Theatre, Inc.

Sioux Falls, S. Dak. STARLITE DR. Exec: E. R. Ruben and Joseph Floyd.

NEW HAVEN TERRITORY

Connecticut

Montville, Conn. DRIVE-IN (Route 32). Exec: (LOEW) E. M. Loew, E. M. Loew Drive-In Theatres, Inc.

Waterford, Conn. DRIVE-IN (Route 1). Exec: Joe Gloth.

NEW ORLEANS TERRITORY

Louisiana

Alexandria, La. DRIVE-IN, Junction of Highways 76 and 20. Exec: (FOX) Billy Fox Johnson, Billy Fox Theatres Enterprises.

Ponchatoula, La. DRIVE-IN, Highway 51. Exec: Dallas Woods.

Mississippi

Laurel, Miss. DRIVE-IN, Highway 11. Exec: C. E. Jenner.

NEW YORK TERRITORY

New York

Croton-on-Hudson, N. Y. HARMON DR. (Route 9). Exec: J. Britchey.

OKLAHOMA CITY TERRITORY

Oklahoma

Ada, Okla. DRIVE-IN. Exec: (GRIF) Henry Gritting, Griffith Theatres.

Bartlesville, Okla. DRIVE-IN, Highway 60. Exec: (GRIF) Henry Gritting, Griffith Theatres.

Duncan, Okla. DUNCAN DR., Highway 81. Exec: (GRIF) Henry Gritting, Griffith Theatres.

El Reno, Okla. EL RENO AUTO, Highway 66. Exec: W. B. Shuttee.

Oklahoma City, Okla. TINKER DR., South West 29th St. Exec: (BART) Lewis Barton.

Texas

Borger, Texas. DRIVE-IN. Exec: (GRIF) Henry Gritting, Griffith Theatres.

Pampa, Texas. DRIVE-IN. Exec: (GRIF) Henry Gritting, Griffith Theatres.

OMAHA TERRITORY

Nebraska

Avery, Nebr. GRANDVIEW OUTDOOR. Exec: E. C. Petsch.

South Dakota

Yankton, S. Dak. MOVIELAND. Exec: Max Slaughter.

PHILADELPHIA TERRITORY

Pennsylvania

Norristown, Pa. DRIVE-IN.

PITTSBURGH TERRITORY

Pennsylvania

Aliquippa, Pa. GREEN GARDEN OPEN AIR, Hopewell Township. Exec: Peter L. Kulik, Kulik Brothers.

Baden, Pa. A B C DR. (Route 88). Exec: Gabe Rubin, A B C Drive-In.

Carmichaels, Pa. CARMICHAELS DR. (Route 88). Exec: Lou Stuler, Stuler and Coe.

Ellwood City, Pa. BLUE SKY DR., Zelienople Rd. Exec: John Wincek, Wincek and Tate.

Latrobe, Pa. HI WAY (Route 30). John Ridilla, Hi Way Theatres, Inc.

Mundys Corners, Pa. FAMILY (Route 22). Exec: Gus Vaveris, Family Drive-In Corp.

Warren, Pa. WHITE WAY DR. (Route 6). Exec: Ben White.

ST. LOUIS TERRITORY

Illinois

Herrin, Ill. MARLOW'S DR., Highway 148. Exec: (MARL) John Marlow, Marlow's Amusement Corp.

Missouri

St. Louis Co. Mo. NORTH DR., Highway 99 and St. Cyr Rd. Exec: (KAIM) C. H. Kaimann, Kaimann Circuit.

SAN FRANCISCO TERRITORY

California

Madera, Calif. MADERA DR., Highway 99. Exec: Henry Presidio.

South San Francisco, Calif. STARLITE DR., 30 South Linden Ave. Exec: Rex Stevenson, San Francisco Drive-In Theatres Corp.

SEATTLE TERRITORY

Washington

Omak, Wash. VALLEY DR., Highway 97. Exec: A. J. Varrelman, Valley Drive-In Co.

WASHINGTON TERRITORY

Maryland

Elkridge, Md. ELKRIDGE DR., 6200 Washington Blvd. Exec: Ralph Rose, Elkridge Drive-In Theatre, Inc.

Virginia

Bassett, Va. FAMILY DR., Bassett Forks. Exec: Cecil Ward.

West Virginia

Moorefield, W. Va. MOOREFIELD DR. (Route 220). Exec: H. E. Bensenhaver and James M. Miley, Moorefield Drive-In.

A New American Institution

Drive-In Theatres Express the Freedom and the Functionalism of Our Times

A general review of the progress of drive-in theatres through recent years, and the operational techniques which have progressed with them. Based on this progress, an effort is made to forecast the eventual number of first-class drive-in theatres that will be needed to adequately serve the entertainment needs of this special segment of the Nation.

The golden age of the drive-in has dawned.

The theatre of the open road is clicking because it is as American as the old nickelodeon here by the highway.

The entire family, snug in the family car, can enjoy the life of Riley, seeing movies, munching popcorn, and swilling soda pop.

The open-air setting has the distinct attraction of being less stuffy than the conventional theatre. The head of the family may smoke in comfort, Mom wear what she happened to have on, and the kids get a good view of the proceedings from the back seat.

Young couples were among the first to find these after-dark surroundings especially beguiling. Any capers by cut-ups, on the other hand, are vigorously suppressed by patrons in adjoining cars and by attendants.

The drive-in seems to have been evolved for families with babies. More and more theatres are putting in bottle warming services in answer to an increasing clamor. This knocks the baby-sitter problem squarely on the head. Some folks even bring their dogs and cats to the show.

A complete cure of the parking headache causes an astonishingly large number of citizens who don't get around so well to turn up, some for their first movies in years. For one and all, handicapped or whole, the informal functionalism of the movies-in-your-car theatres is becoming increasingly the answer.

Idea Grows

Look at the statistics:

There were only 300 drive-ins operating in this country at the start of 1948, a representative of R. M. Hollingshead, Jr., has declared. Yet a careful census by the authoritative Motion Picture Association in the fall of that same year listed some 743 then operating, with a total car capacity of 310,203. From this can be gained some evaluation of their rapid growth.

Hollingshead pioneered the motorists' theatre idea in 1933 at Camden, N. J., through Park-In Theatres, Inc. He owns the basic patent, which covers the car aiming ramps. Although his inspiration was rather slow in catching on, the rattling good business done in recent years by existing drive-ins and the construction everywhere humming on new ones has at last brought this type of theatre to public consciousness.

Americans are becoming more and more accustomed to the spectacle of long lines of automobiles, jeeps, trailers, and even people on horseback waiting to pull into a drive-in from alongside the highway. This is the picture from Lake George, N. Y., to Florida and the Pacific.

Today it is reported that Ohio has more automobile theatres than any other state in the union. In the Cleveland exchange area alone, there are some 51 of these motion picture establishments. Cincinnati boasts of 53. A few authorities have set the national saturation point for drive-ins at the 1,500 mark. But who can tell?

Recent data indicates that the Minneapolis-St. Paul area is due for one of the biggest drive-in booms. Here a company has been formed to build a number of 1000-car theatres. In addition, private parties are blocking out similar undertakings in the area and North and South Dakota, northern Iowa, North Carolina, New Jersey, Pennsylvania, and Texas are also feeling the boom.

So an idea sweeps the land, its popularity dictated by a motorized age. The formula is not entirely new. In South America, open air theatres are general, but America is the first country to adopt the idea for an audience in automobiles.

Large Screen

The screen is larger than normal owing to the wide area covered by the audience. Sound is taken care of either by speakers at fixed points, in the older drive-ins, or by a speaker placed inside each car. With the in-car unit the motorist himself tunes in the picture.

Chiefly concerned with the family trade, outdoor exhibitors bill mostly action dramas, comedies, and musicals. Heavy sex stuff and the too-abnormal are side-stepped whenever possible. These exhibitors more than likely will show slightly older products than the brick-and-mortar theatre men, although this is not always the case.

The staff of a drive-in is enormous by indoor standards. Each theatre has a crew of from 18 to 25 uniformed attendants. Their ranks include ushers, who greet each car and personally guide it to a ramp; part-time mechanics who cope with stalled-car situations, and personnel to flash instant notice of a patron's desire to see a concessioner.

Concessioners, incidentally, do a brisk business on the premises. Authoritative estimates indicate that on the first show the concessions—ice cream, popcorn, and candy, bring in about 40 cents per car. Confection prices are uniformly higher, and sometimes double that of regular theatres. There are drive-ins employing jeeps, motor scooters, and tricycles to cover the vast distances of the theatre.

Proven Principles

Many horrible obstacles will arise to defeat the would-be drive-in builder should he fail to follow a few proven principles of outdoor theatre construction.

Chief among these is the selection of the spot for his enterprise. The cards are stacked against the man who attempts to set up a drive-in on rugged terrain, in an area of fog or mosquito infested swamplands, or on a site populated by less than 10,000 persons within a 10-mile radius, or too distant from a heavily-travelled highway.

The theatre man will be endlessly digging drainage ditches and sewer trenches. The motion picture equipment people have advanced schemes to circumvent these dangers, and, in the company of a civil engineer, will be only too glad to be called in for consultation.

Anything but level land or, better still, gently sloping land, is regarded by them as a poor risk. Where too drastic physical changes are required, the construction cost will run away with the project.

They also will point up the advantages of easy access to a three-phase electric power line and the desirability of city water and sewer connections wherever possible.

They will insist that the would-be drive-in operator pay a visit to the local zoning boards and traffic control authorities to make absolutely certain that a drive-in will be permitted in the neighborhood.

But given a good location, good equipment and good management there is a monetary return in drive-in theatre operation that no bricks-and-mortar theatre can ever approach. This is best proved by data, again from the M.P.A. census, that only 13 with total car capacity of 3175 were unable to make the grade and folded. This would also indicate that the smaller (average 244 cars) is the harder to make pay.

Conclusion

In the pages that follow will be found more up-to-date, factual data on the design, construction, equipment, maintenance and management techniques of drive-in theatres, than has ever previously been published in any one periodical. All is the result of a carefully planned effort to record and disseminate needed knowledge. And all reflects the birth and growing pains of a new and husky American institution.

A Home in a Drive-In

How the Petersons of Salt Lake City Built Their "Dream-House" Right in Their Theatre

When the Editors heard of a drive-in owner who had developed a design-for-living, and for working, that made them just a little envious, it was decided to rush through an editorial and picture study of his plan even though it was currently in the center of the "snow country". Mr. Anderson's story is the result.

The author points out that a contemporary periodical, The New York Times, erred in referring to this theatre as "smoke curling from behind a theatre screen". It sounded very nice, but he says: "As my piece points out, the house is electrically heated. There ain't no smoke, nohow!"

To join the crowd of the envious,—read on!

By Bryce W. Anderson
(Photographs by Willard L. Arveseth)

There's living space—and plenty of it—for Erick C. Peterson and his family directly beneath the screen and stage of his Motor-Vu Theatre at the base of the Wasatch Mountains on the eastern edge of Salt Lake City. And the home Peterson has built there is no ordinary one. It is as unusual as its location, and as modern as the in-car speakers that carry Motor Vu Theatre's sound to its patrons.

There are eight rooms in the uniquely-planned home, plus bathroom, a powder room adjacent to the kitchen, and spacious closets. Floor space is more than 1800 square feet.

No cramped apartment, the Peterson menage has a 15x24½-foot living room; 14x14 master bedroom; 10x12 second bedroom; 11x20 kitchen and breakfast nook; 10x22 utility room; 10x22 shop devoted to repair of theatre equipment; 10x12 theatre reception room; 9x10 sound studio; 7x10 master bath, and 4x5 powder room. Its largest closet is 4x6 feet.

Picture windows, commanding beautiful views of the Salt Lake Valley, and the latest all-electric equipment are among its features.

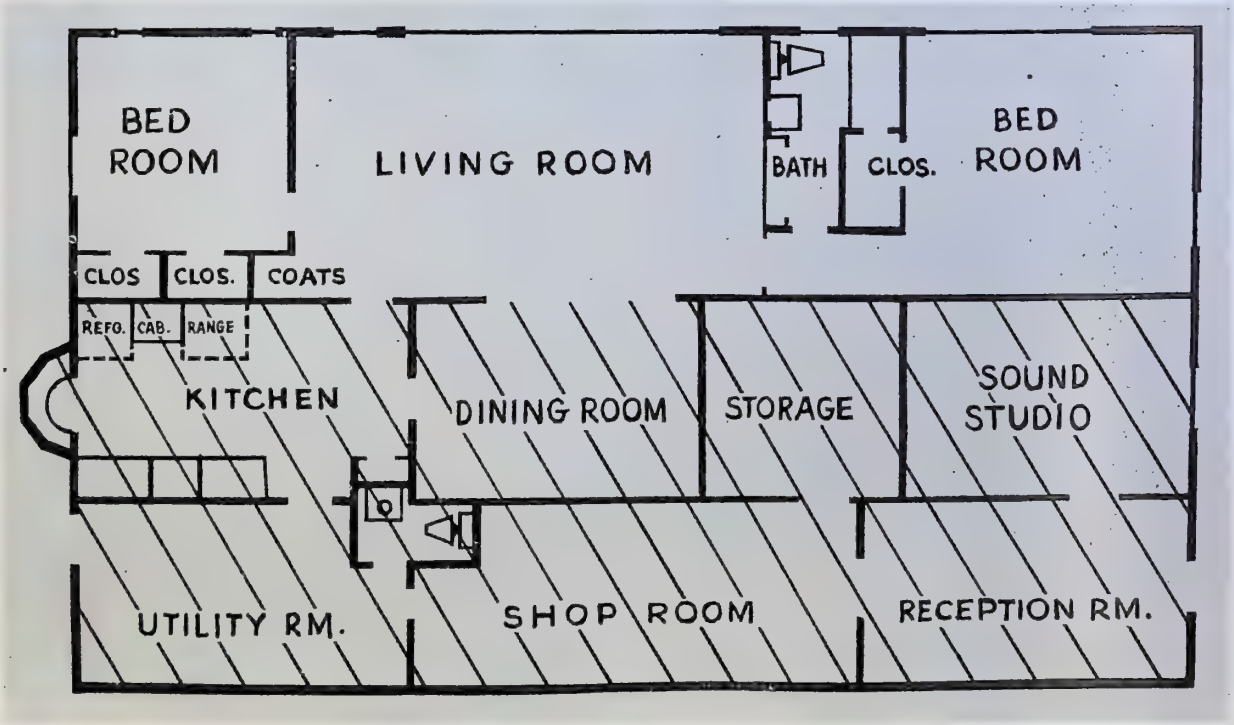
The home was not built when Peterson first constructed the drive-in theatre. It was an "afterthought".

"We found that my son Carl and I were up until far into the morning because of the necessity of being at the theatre constantly until after it closed for the night, then driving home," the senior Peterson relates. "Our first season wore us to shadows.

"The theatre location is such as to provide one of the best view sites in Salt Lake Valley. Others pay premium prices for home building lots with less advantages. We decided we could build a comfortable home with a beautiful view right on the site, and incorporate it into the theatre tower so that we could be at home and still at work."

Although the Motor-Vu drive-in was designed by Paul Evans, Salt Lake theatre architect, Peterson went to another specializing home architect, E. W. Graham, for plans for the living quarters. Several plans were drawn and discarded before one was accepted which provides spacious windows, hosts of modern comforts, roominess, accessibility—and privacy.

Work on the home was started by John E. Burbidge, Salt Lake contractor, in July, 1948—at the height of the summer drive-in season. While crowds nightly viewed the show at the Motor-Vu,



FLOOR PLAN for Mr. Peterson's house. The shaded area is under the screen tower and stage apron, which limits room height to 78 inches. The balance has standard 8 foot ceilings.

Burbidge and his crew daily were busily "tucking" a home under the screen—without interfering with the theatre's operation.

The job was completed, and the Petersons moved in, shortly before Christmas, 1948. Landscaping and some outdoor painting were allowed to wait for the arrival of spring.

Peterson was fortunate in his initial choice of location for the Motor-Vu. It is situated in a natural amphitheatre at 3500 East 33rd South St., Salt Lake City. As originally constructed, it provided parking space for 702 cars on 13 ramps. The Petersons planned to provide space for 12 more cars with opening of the 1949 season.

Motor entrance is from the south—from 33rd South St., which is a Federal transcontinental highway (US 50) at that point. The theatre is little more than a hundred yards off this highway, although it carries a 33rd South street number.

The 55x60-foot screen is laid north-to-south, with the parking area to its east. Because of the natural bowl, the screen base is only eight feet from the ground, yet visibility is provided for the entire 13-ramp layout. As an unusual feature for a drive-in, a stage is constructed with the screen as backdrop. The Motor-Vu presented a stage show on its opening night, June 7, 1947, and has used the stage for "live" shows several times since.

The living quarters are so constructed that the living room and two bedrooms extend to the west of the theatre tower, facing west. The screen sits above the kitchen, dining room, cedar-lined storage closet, and sound studio. The utility room, powder room, shop room, and reception room are beneath the stage.

The last four rooms named have 6½-foot ceilings because of their location under the stage. Ceilings in all the other rooms are the standard 8-foot height.

As the east wall of the home fronts the drive-in area, it is a blank wall—windowless. However, a glass door lets sunshine into the reception room at the north end, and a window is provided on the utility room at the south end, so that only the shop room depends solely on artificial light.

The large storage closet approximately in the center of the home is partitioned into a cedar-lined clothes closet, facing west, and a supply storage room, facing east. The latter connects with the shop room and has a stairway leading through a trapdoor into the theatre tower.

The utility room has laundry facilities and at the south end is partitioned off to provide space for electric water heaters. Two large electric water heaters are used, one providing hot water for the house's faucets and the other providing hot water which circulates through radiators to heat the home. As an unusual and highly effective feature, these radiators are located directly beneath the large picture windows in living room and bedrooms, so that they serve as defrosters for the glass panes as well as heating the rooms. The result is that the windows in the home are dry and clear even in the most severe winter weather.

The kitchen is located directly west of the utility room in the south central portion of the structure — beneath the screen. At its south end is a semicircular window built on 3-foot radius, in which is a built-in upholstered seat and a breakfast table. Kitchen equipment includes yellow-tiled workbench almost the entire length of one wall, with cabinet space above and below; electric refrigerator, electric range, electric garbage disposal, and electric dishwasher.

Peterson says the home was made all-electric of necessity, because gas lines do not extend to the high benchland where the theatre is located. He has gone "all-out," however, in installing electric appliances—resulting in a great saving in housekeeping effort for Mrs. Peterson.

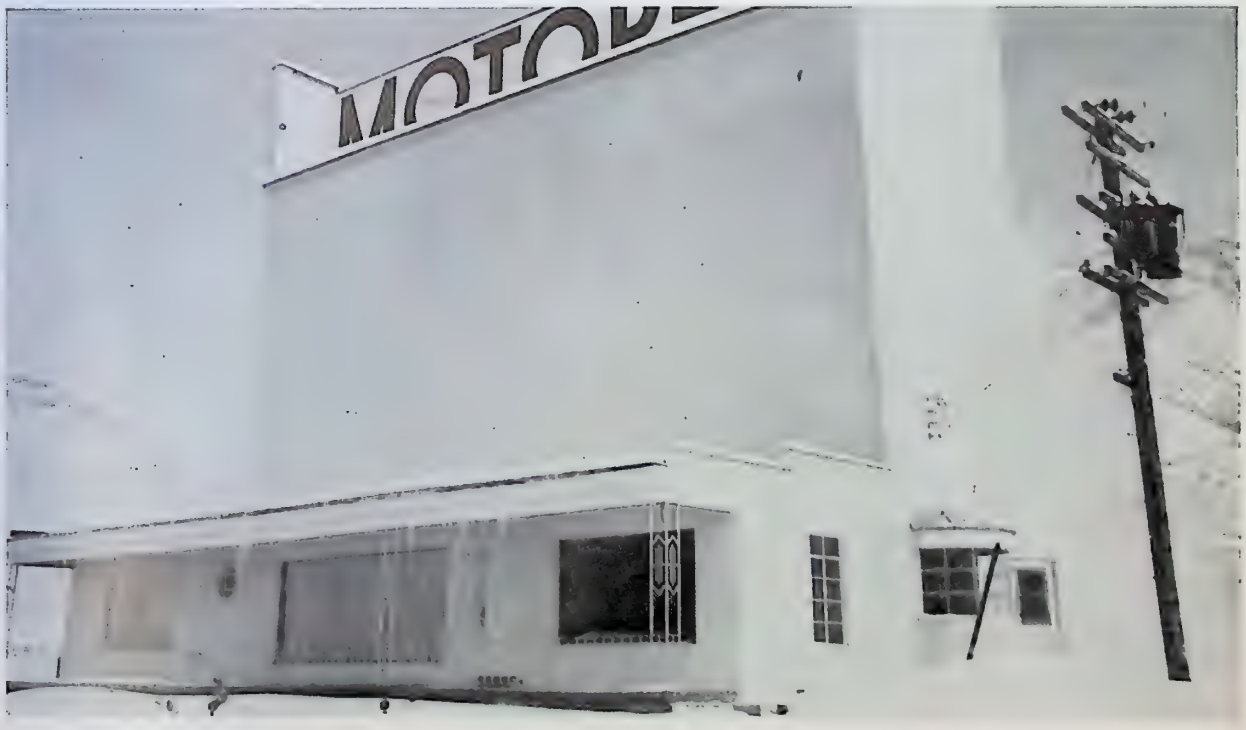
The dining room is in the center, between kitchen and storage room, but is connected to the living room by an archway to take advantage of the 15-foot-long picture window in the west wall of the living room.

Beyond the storage room is the sound studio, equipped with microphones and double-turntable record player to provide before-show and intermission music for the theatre. Carl Peterson, the owner's son, is sound technician and operates this equipment.

All the equipment in this sound studio is duplicated in the theatre's projection room, so that the younger Peterson can operate the sound from either location. Broadcasts have been "piped" to Salt Lake radio stations from this sound studio and the adjoining reception room.

The smaller bedroom is on the southwest corner and has a standard window on the south and a 5-foot 3-inch by 5-foot 9⅝-inch picture window looking onto the elevated patio which runs the full length of the front (west) wall.

Both this bedroom and the master bedroom similarly arranged on the northwest corner have an unusual feature in their spacious closets. Closet lights are



A VIEW WORTH DOLLARS is obscured by winter snow, but some idea of the modern style of Mr. Peterson's house and the splendor of his mountain view can be gained from this winter scene.



THE DINING ROOM is windowless but draws its light through a large arch from the living room. The 15 by 24½ foot living room is as modern as tomorrow, with built-in electric radiators and an electric fireplace. A large mirror above the mantel gives depth to the room. The huge picture window, 15 feet long and set with a single pane of plate glass brings the changing mountain view indoors.

connected to contact switches set in the door frames, which turn the lights on when closet doors are opened, turn them off when the doors are closed—like the light switches in electric refrigerators.

The spacious living room, 15 feet deep by 24½ feet long, centers the west wall. A huge picture window, 15 feet long and set with a single pane of plate glass, is in the center of the wall and looks across the patio, down on the lights of Salt Lake City. A fireplace is in the north wall of the living room. Only an electric log is used, however, to eliminate all smoke, so no chimney has been built.

The master bathroom, between living room and master bedroom, features a built-in vanity which carries a mirror from shelf to ceiling, with the mirror tilted slightly to provide a full-length view. The master bedroom on the north approximates the bedroom on the south except for its larger size.

The entire home is soundproofed to eliminate any annoyance from the theatre sound. Kimsul insulation is used above the ceilings throughout and in all walls. The same insulation is carried under the floor in the sound studio to prevent any possibility of sound leaking into the amplifying system from outside.

Interior decoration of the home is by Dorothy Johnson, of Salt Lake City. The living room and dining room are furnished in French provincial pieces. Living room walls and ceiling are of cool green with a blue cast, painted over



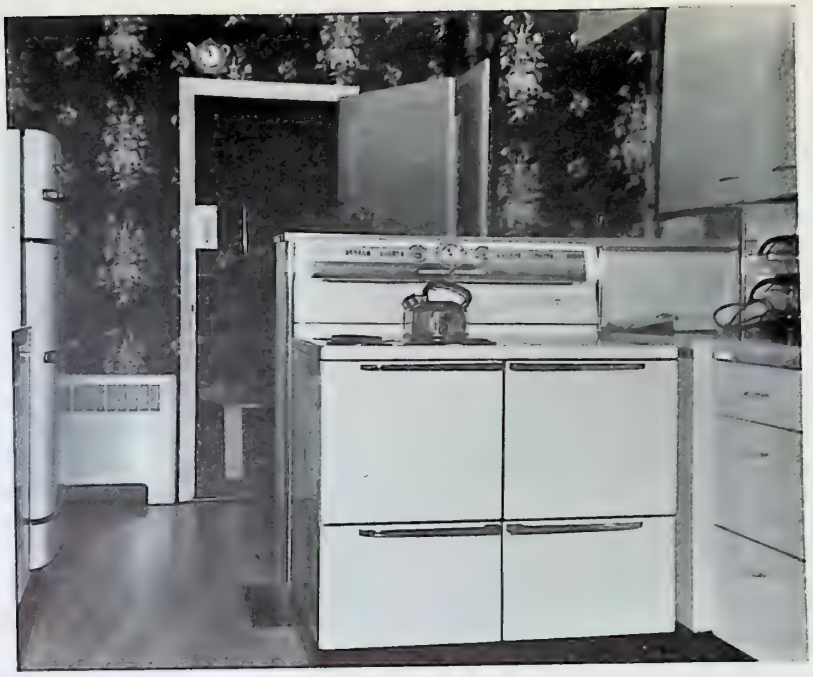
canvas. Woodwork and carpeting also are green. Twin wingback chairs in the living room pick up rose tints of the wallpaper in the adjoining dining room, which is of rose and red figures on green base. Living room lounge chair is covered in gold, and sofa in green. An antique-topped coffee table also picks up the rose tint. Torchier lamps have green onyx bases.

The electric fireplace is done in suntan ceramic tile, as are window sills. A recessed light is set in the mantel shelf above the fireplace to throw an indirect glow on mantel ornaments. A crystal prism, hand-painted glass lamp on a tier table picks up highlights from the furnishings. Nylon drawn draperies are in eggshell shade.

The master bedroom is done in blue-gray and rose, with white woodwork. Furnishings in this room are in mahogany, curtains and drapes in eggshell shade. Rose-pink lamp shades reflect roses in the figured carpet. Chaise-longue and bedspread are in matching blue-gray.

A green-carpeted hallway connects living room and master bedroom, opening also onto the bathroom on one side and the cedar-lined closet on the other.

A woodblock pattern wallpaper is used in the second bedroom, occupied by son Carl. Draw draperies match the paper. Woodwork is eggshell, and carpeting tan. Furnishings are of maple, and a nautical



ALL-ELECTRIC FIXTURES in the kitchen relieve the drudgery of house work for Mrs. Peterson. Note the ample closet space. The main feature of the kitchen is the upholstered breakfast nook with large windows overlooking the glories of nature. In this particular instance the scene is wintry and there is little to do until next spring, but Mr. Peterson and son Carl are snug and comfortable.





SON CARL in the sound studio equipped with microphones, double-turntable record player, and other sound equipment. A reception room adjoins it. Music can be played before the show and during intermissions from here or the projection booth. Carl is sound technician, and operates all equipment.

ceiling fixture carries out the masculine motif.

The north end of the kitchen, adjoining the dining room, is papered with a deep brown base and chartreuse, rose and green design. Upper walls and ceiling are of light green. Woodwork is yellow and tile working surfaces and walls are yellow with chrome feature strip. Linoleum is bright yellow, trimmed in black. The bay window breakfast nook is furnished in mottled green plastic with a glass-surfaced round table. Incidentally, there are 17 metal cabinets in the kitchen.

Green and yellow woodwork and linoleum carry out the same color scheme in the utility room. Suntan is the dominant color in the powder room.

The shop room has white-painted walls and ceiling to provide maximum light, with blue linoleum.

Fluorescent lighting is used throughout the house.

Here, beneath the stage and screen, the Petersons have a "dream home" taking full advantage of a view so magnificent that a Florida tourist once told the theatre operator: "You should charge $2.50 admission to your shows—50 cents for the picture and $2 for the view!"

DRIVE-IN THEATRE BRIEFS

Reserved Ramps

Daytona Beach, Florida. An interesting variation on road-show attractions will take place March 24 through 27 when "The Red Shoes", the big Technicolor special is scheduled to play the local drive-in theatre on a single feature basis. A certain number of ramp locations will be sold both in advance and at showtime for the increased admission scales of $2.40, $1.80 and $1.20 per person. This is believed to be the first time that road-show techniques have been applied to drive-ins.

EDITOR'S NOTE: It is interesting to speculate whether there will be more Cadillacs than Chevrolets in the $2.40 locations. And whether the confection stand will carry a special line of Champagne for the occasion.

* * *

Wind vs. Screen Towers

Watertown, New York. Gusts of wind, reaching a velocity of 65 mph, swept through here recently and destroyed the screen of the 250 car Star Lit Drive-in. The screen was mounted on a tower 20 feet above the ground, resulting in an overall height of 60 feet. Fred W. Kleemier, manager, said another screen would be ready for the spring opening.

EDITOR'S NOTE: Quite a blow! Both to Fred's pride and to his pocketbook!

* * *

Suicide in a Drive-in?

Knoxville, Tennessee. Police warned patrons of drive-in theatres to turn off their motors while watching the show. It seems that six were very nearly asphyxiated recently.

EDITOR'S NOTE: Some of those old pictures that are dug up when business gets poor near the season's end might force some patrons to find a quicker way out than driving.

* * *

As American as Hot Dogs and Hamburgers

Darien, Connecticut. Lawyer A. D. Savitt, representing the Jenver Realty Company in a zoning appeal before the Darien Board of Adjustment stated that "Drive-in theatres are as much an American institution as hot dogs and hamburgers." He then introduced Martin Bennett of RCA as "the top authority on drive-in theatres in America."

EDITOR'S NOTE: Well, we'd like to hear Marty discuss hot dogs and hamburgers. Maybe he is the top authority on them!

Recommended Practices for Seasonal Closing

Two Drive-In Showmen Survey the Methods and the Materials Found Practical From Actual Experience

When it is remembered that 611 of the 748 open and operating Drive-In Theatres of the U.S.A., as listed elsewhere in this volume, are keyed to various length seasons, the need for reliable knowledge about how best to protect the physical property and equipment is a real one. As a result, the editors invited two experienced authorities to contribute their views and the following dual survey,—often divergent in method,—is the result.

The growing Drive-In Theatre Industry has presented a real test to the self reliance and creative ability of the nation's showmen. Seasoned theatremen, when faced with problems not found in normal roofed-theatre operation, lent on their background knowledge and their night-to-night experiences at the gate or on the parking ramp, and came up with policies that closely resembled seasoned theatre methods. Relative newcomers, of whom there were many, were not hampered by theatre traditions and possibly in their trial-and-error manner contributed even more basically new ideas. The net result is that many of the drive-in problems have now been reduced to a set of accepted practices that promise to continue as basic routine.

Much Needed Knowledge

While this volume is formalizing and recording for the first time many of the new, as well as the tested and proved, ideas in cash control, lighting, confection vending, insect control, sound distribution, etc., the drive-in showman still has many needs for self-education.

Except as a home hobby, the showman never needed to know the rudiments of horticultural planting and plant pest control, or the care of lawns and fencing. Except for his own children, he never needed to acquaint himself with the placement and maintenance of playground equipment such as slides, swings, and merry-go-rounds. And among a myriad of other subjects, he never needed to learn more about closing a theatre than turning the heat to minimum, switching off all lights, and turning a key in the lock.

But the drive-in theatre presented all of these problems. And it is with this last subject that we are now interested.

Advice of Experts

As experienced expert Number 1, the editors chose JACK VAN LLOYD, the Director of Publicity for Park-In Theatres, Inc., of Camden, N. J., who is in charge of theatre operations for their 3 theatres in the Philadelphia distribution territory. Mr. Van Lloyd is the editor of Park-in Pointers which is a monthly service bulletin directed to Park-in Theatre licenses as one of many designs and operational services, and as a result has studied and written much helpful data on operational techniques. He also experiences the somewhat more extreme winter conditions of the northeast where snow and sleet storms plus extreme lows in temperature carry their particular problems.

As experienced expert Number 2, an especially capable drive-in showman was chosen. ALBERT BERNSTEIN, while young in years, has been actively specializing in drive-in theatre operation for the Fabian interests for more than two of them; and in this young drive-in field this qualifies him as a veteran. Schooled in drive-ins at the Mohawk near Albany, N. Y., he was later assigned the task of opening Fabian's new Lincoln on the outskirts of Philadelphia. So successful were his efforts that three months later he was invited to help out on the opening of the same company's Staten Island addition. Originally from Richmond, when Mr. Bernstein learned that his company planned a collaborated effort with Neighborhood Theatre circuit at Bellwood, Virginia, he enthusiastically returned home to supervise its opening in May, 1948, and establish its operating methods. Shortly after this, he did the same job at Fabian's new Norfolk near Norfolk, Virginia — and then settled down as resident manager of the Bellwood.

Experiencing the slightly milder winter conditions around tidewater Virginia, Mr. Bernstein's views must also be colored by his experiences in his other efforts farther north.

Feeling confident that these two are thoughtful showmen who have the qualifications of authority, their views are herewith set forth with pride.

THE RECOMMENDATIONS OF JACK VAN LLOYD:

The frost is on the Pumpkin,
And the fodder's in the shock—
Time to close your Drive-In
And turn the key in the lock.

However, there is a great deal more to closing than indicated in the above jingle, and with this in mind, I have sought advice and information from a number of the "old hands" in the business who have had several years' experience in closing drive-in theatres. A compilation of their experiences and ideas is listed herein.

The Booth

Your most delicate equipment is, of course, located in your projection booth and the greatest damage will occur there if it is not properly protected. In locations subject to extremely cold weather, a thermostatically controlled electric heater can be installed in the booth and set to maintain a temperature of approximately 50 degrees. Another method of preventing moisture in your machines is to run regular extension cords with 60 watt bulbs in the projection lamps and others in the sound heads. Next, you should remove the projector heads, lenses and condensers and place them in safe, dry storage. At the same time, all mechanisms should be packed with vaseline or another suitable lubricant. It is advisable to put a coat of vaseline over the entire exterior of the machines as well. After the above has been done, the entire remaining equipment should be covered with blankets or tarpaulins.

Unless you care to go to the expense of removing the amplifiers, there is not much to be done with them. They should be well covered and a light bulb can be placed inside the covering to combat moisture.

A bulletin received from the Hertner Electric Co. on the care of the generator is so comprehensive, I am taking the liberty of reprinting same below:

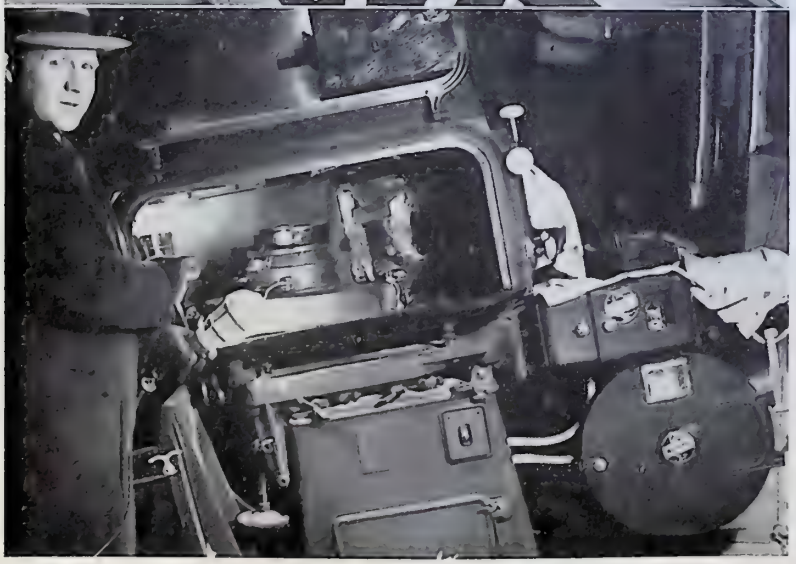
"Fortunately for the drive-in management who uses a Transverter motor generator for his projection arc power supply, the problem of what to do to protect this item of equipment is fairly simple. Unless there is the danger of a flash flood which would result in immersion of the motor generator, the following are the only protective steps necessary:

1) Open main line switch ahead of starter.
2) Wipe off all grease or oil that may have worked out of the bearing, due to over-greasing or oiling. Blow out all dust and lint.
3) Raise the generator brushes from the commutator by lifting them off just far enough so that the spring tensioned fingers, which in normal operation exert pressure on the top of the brushes, drop behind the brushes to hold them off the commutator, but still in the brush box.
4) Cover the motor generator with a rather close fitting, heavy tarpaulin. Either weight down the bottom of the tarpaulin, or tie it snugly to avoid the danger of rodents getting into the electrical windings.

"If these steps are followed, the Transverter will come through the winter season in good shape. The tarpaulin







will prevent any excessive sweating due to changes in temperature, and because the electrical windings of the Transverter have a baked-on insulating varnish, impervious to moisture, there is no danger of humidity and dampness affecting it, as might not be the case in other types of rectifying equipment having plates or stacks that can be damaged by too much dampness or flashed over and damaged in the spring due to accumulated moisture.

"In the spring, when the time comes to get ready for reopening, the following procedure is suggested to prepare the Transverter for operation:

1) Remove tarpaulin.
2) Examine for rodent nests in the event tarpaulin has been disturbed.
3) Check oil level if bearings are of the sleeve-oil variety.
4) Close main switch and start unit with brushes still raised.
5) Polish commutator with canvas cloth pad.
6) Stop unit and drop brushes back onto commutator. Make sure all brush finger tension springs are in position and that the brushes can be moved up and down freely in the brush holders. Replace short brushes.
7) Restart unit and allow to run at least one-half day before operating the arcs, to dry the unit out thoroughly. Be sure the field circuit is closed so that voltage is generated during this period.

"It is assumed that the Transverter has been installed high enough off the ground level to prevent it from being immersed in locations where a flash flood could occur. However, should there be such a misfortune, the Transverter will not be unduly damaged and can readily be put back into service without having to remove it from the generator room. Of course, certain dismantling and cleaning will be necessary—especially with regard to the bearings. Contact the manufacturer for special instructions."

Naturally other generator manufacturers may have a slightly different form to their advice; but this Hertner schedule seems so basically sound that it very well could be followed on all.

The Speakers

Many operators remove all speakers and place them in dry storage, but experience of others has proven this is not necessary. Waterproof paper bags, made to the measurements of your own speakers can be obtained from theatre supply stores. These are simply slipped over the top of the speakers, gathered into the shape of the speaker post and secured with a stout cord. A few small holes should be punched in the under side of the bag with an ice-pick to relieve condensation.

THE VAN LLOYD METHOD of greasing locks, within a tobacco sack, may be seen at left, top. Although covered with snow and ice, a slight pressure of the hands crumbles the ice, and when the sack is removed the lock may be opened with little difficulty. The second photo shows the interior of the concession stand with all fixtures coated with vaseline and the counter covered with newspapers. The vaseline coated projector is also shown, prior to being covered with a heavy tarpaulin. An incandescent lamp is left burning within the projector to insure warmth.

Rest Rooms and Offices

All water pipes should be drained, flush boxes should be emptied, and anti-freeze or salt should be placed in all traps.

Ticket registers should be removed from the box-office, heavily greased and placed in warm storage.

All signs should be covered and/or taken down, wrapped and stored inside to prevent cracking of paint.

The attraction sign can be set up to announce the reopening. Then posts should be erected at each end and the entire sign covered with very small mesh wire, or the entire sign can be covered with lumber.

Neon and light bulbs should not be removed. If removed the connections or receptacles will corrode. If it is judged necessary to remove light bulbs, place corks in the sockets.

If your drinking fountains are in the open, they should be covered with a waterproof material to prevent snow melting and bursting the pipes.

If feasible, spotlights and floodlights should be removed and stored in the booth or refreshment stand.

Refreshment Stand

All equipment should be thoroughly cleaned, greased, and stacked on counters or tables. If possible, wrap equipment thoroughly in cloth or canvas.

Consult your refrigeration service man as to the care of your refrigeration.

After all else is completed, thoroughly close all the portholes in the booth and the doors and the windows in all other buildings. If possible, seal these both inside and out.

All exposed padlocks should be thoroughly greased and then covered with a tobacco sack, drawn tight and tied. This will give you easy access to the lock, should it be covered with snow or ice on your mid-winter inspection visits.

Most Important

Some dependable member of your organization should make a weekly inspection of the entire theatre throughout the closed season.

Storage of Supplies

Tickets remaining on hand at the end of the season should be carefully audited, checking the number sold during the season against the combined total of those on hand when the season started, plus any additional purchases. After auditing, they should be removed to the main office or some other place where they will not be stolen if someone should break into the theatre.

Your policy and concession trailers should be rewound and placed in metal cans which, in turn, should be removed to dry storage.

The above information seems to me to combine the best ideas experienced.







AT THE TOP, RIGHT, can be seen a closeup of an in-car speaker that has been thoroughly conditioned to withstand the rigors of the winter months a la Van Lloyd. The speaker is wrapped with a cellophane inner-liner, then covered with a paper bag having a wax-coated exterior. Holes are punched in the bottom of the bag to offset any condensation which might form. An overall view of the wrapped speakers may be seen in the second photo. The drive-in entrance is barricaded, bottom, to keep trespassing cars from entering the grounds during the closed season.

THE RECOMMENDATIONS OF ALBERT BERNSTEIN:









In-Car Speakers

It is a big job, shutting up shop under the stars—one that starts from three to four weeks before the actual shutdown. In-car speakers, for instance, are taken up and stored, one by one, until by closing day the manager is on the home-stretch of this strenuous undertaking. Sometimes a little foresight makes the work easier. Bernstein saves all the cartons in which the manufacturers packed his speakers and junction boxes and repacks them in their original containers.

The cable ends of the dismantled speakers should be covered with tape to preserve during the last few weeks of operation adequate sound volume in those that are left standing. The speaker poles themselves may be either capped or covered with heavy felt tarpaper, held in place by wire. The former, requiring the removal of the flange which holds the junction box in place, is probably the more expensive practice of the two.

Beware of Floods

Speakers and junction boxes may be piled up for the winter on the counters of the concession stand, a dry enough place ordinarily. But in regions where floods have been known to occur, this equipment should be stored in a safer and drier place.

Projection Equipment

The same precaution, of course, applies to projection and sound heads. In addition, these should be well oiled and greased in preparation for their period of inactivity. As for projection lamps, they may be left set up, but require suitable protection. Most projectionists know how to deal with this problem.

In order to prevent dirt from seeping into lamp housings and the projection booth, all lamp exhaust vents should be taken down and holes plugged. It is imperative that projection lenses be carefully packed and advisable that they be locked up in the office safe.

Bernstein specifies as a condition of his shutting down an ozoner, the summoning of a sound engineer, who may suggest additional precautions in the storage of booth and sound equipment. For example, to eliminate the possibility of the booth's being broken into during the winter, all booth shutters should be securely closed; and, to minimize damage from weather, the projection room should be cleared of all equipment sensitive to cold and moisture.

Anti-Freeze Imperative

Care of water services entails the disconnection and drainage of all lines, and the pouring of anti-freeze into all water traps. Further, sewer trenches and drainage ditches should be cleaned up before the theatre is considered properly closed for the season.

Concession Equipment

At the concession stand, such hold-over equipment as freezers and cold-storage boxes should be insulated with a lubricating agent, possibly vaseline. In order to permit air to circulate freely about them, they must not be wrapped up or covered, however. Such items as coffee urns, griddles, and hot boxes must be stored in a place where a more or less even temperature is maintained throughout the winter.

Burglary Insurance

To thwart those who picked up unauthorized keys while the drive-in was still open, additional padlocks should be hung on all doors. Glass preservation is also a problem. Bernstein suggests that a carpenter be hired to cover glass at the boxoffice, storeroom, concession stand, and office so that the possibility of weather and theft breakage can be kept at a minimum.

THE BERNSTEIN METHOD of barricading drive-in entrances below, uses two types of blocking, chain and wire. At the top, left, may be seen the dismantling of an in-car speaker from the junction post. Speakers are then stacked prior to being conditioned, wrapped, and stored. Tops of junction posts are covered with heavy paper to withstand the weather and keep out rain or snow. An over-all view of the wrapped posts amid a blanket of snow can be seen in the last photo.











And so that no amount of hammering on the entrance of the dark theatre will let anyone through, all entrances should be shored up with a barricade at least six feet high. Confronted by an obstacle as high as that, any motorist hoping to get his car into the deserted theatre will become discouraged and drive off.

Lights and Other Gear

Spotlights and floodlights will have to be packed away. It is advisable, however, to leave neon and other lamps in their receptacles. This will prevent corrosion of the sockets. Other items that will have to be cached away, more than likely in the concession stand, include ticket machines, office equipment, lawnmowers, cleaning gear, paper, and so on. Should it prove unfeasible to store them in the refreshment stand, a place might be found in a nearby city where everything could be stored together—a distinct advantage.

Weekly Inspection

About ten days before the shutdown, the utility companies will have to be notified since it often takes that long to get telephone and light services disconnected. As a final step in preventive maintenance, arrangements should be made with someone to go over the property at least once a week during the winter months.

The Grand Re-Opening

When Spring and ideal drive-in weather return, operators who have properly carried out these precautionary measures and others applicable to specific locations will be able to resume business with a minimum of replacements. In the work period prior to actual showings, publicity-minded operators can lure customers by setting up attraction boards to keep passing motorists posted on the grand re-opening. This deadline can be met easily by following Bernstein's sound advice.

EDITOR'S NOTE:

These are the views and suggestions of the men who are actually on the "firing line." We fully expect that as the various manufacturers of drive-in equipment and supplies become cognizant of the special seasonal problems of the majority of drive-in owners, more specialized advice like Hertner's will be forthcoming. However, experience will probably always be the best teacher, and we don't expect to see drive-in theatres prove any exception to this rule.









VALUABLE EQUIPMENT, such as that in projection booth, can be given special care a la Bernstein. At the top, left, can be seen the interior of a booth showing lamp house, base, sound head, and lower magazine, all thoroughly coated with petroleum jelly and left intact. Projection heads and carbon burner have been removed with lens and condenser to dry storage. Portholes of the projection booth may be seen being tightly sealed in the second photo. Thirdly, water has been turned off and all pipes are being thoroughly drained. Even minor items of equipment, such as compressed air door closers, are dismantled and greased during the winter. At the top, right, all metal parts of the concession stand are thoroughly coated with grease. They will then be covered with several layers of newspaper. Windows, signs, and all damagable parts are carefully protected. The next photo shows the boarding-up of the windows in the cashier's boxes. Display and name signs are also protected with heavy boarding. The last photo shows the removal of changeable silhouette letters prior to their being stored away until the drive-in reopens its doors to the public.

A Fence of Billboards

Advertising Spaces Adapted To Drive-Ins Have Important Revenue Possibilities

How one enterprising drive-in showman adapted the normally necessary expenditure for a fence and light baffle to an income producing asset. Lending itself to the smaller and less ornate projects, this use of display advertising boards as part of a theatre property is over a century old and actually pre-dated candy vending as a theatre by-product. It is here introduced for its idea value.

The ancient vaudeville practice of selling merchant advertising on theatre curtains has been adapted to a very modern theatre.

At the Airway Drive-In, Meadville, Pa., a neat additional profit has been brought in by planting the propaganda of local merchants in broadsides around the grounds.

This extra dividend is exceedingly useful both in maintaining neighborly good will with the merchandising fraternities and in defraying the cost of necessary fencing and light baffles. The freshly-painted boards are plainly visible night and day, since each is rigged with an overhead light.

Baseball fans have long been accustomed to being entertained, and sold a bill of goods at the same time through billboards. Remember, too, how placards, celebrating the local hardware man, grocer, and restaurateur, adorned the backdrop in the days of the two-a-day and burlesque?

The fences for drive-ins are a natural for similar purposes.

Another source of revenue that should not be lost sight of is advertising on the other side of the fence. Why not, if it doesn't minimize or conflict with adequate advertising of the theatre itself?

The site of a drive-in is invariably along a main highway. For these expensive situations the big companies pay millions of dollars a year. The open-air theatre creates interest so that proximity to it would be a preferred location.

The more stylish drive-ins will probably eschew such open advertisement of their neighbors' messages on the grounds that it does not add to the overall aesthetic effect of the surroundings, that their expensively landscaped premises are hardly the setting for billboard exploitation, and that the public always has hated this kind of proselytizing anyway.

But consider the member of the audience who is disappointed in the film. He can relax and enjoy a variety of invitations, and imagine himself in such a place as "Waller's" stashing away sea foods and steaks. On the other hand his tastes may run to the finer things in life, like the young lady with bliss in her eyes, being presented an engagement ring by a handsome young fellow fortified by a Camel, or a carefully bred debutante sipping her beer over a poster bearing the name of John J. McGillahooley's bar-and-grill gin mill. Oho! Brother! The Secret life of Walter Mitty had nothing on this!

Yes, like the drive-in is getting to be, the billboards are a deeply-rooted American custom. It is the hope of every advertiser to habituate the people, and to saturate all levels of consciousness with the paramountcy of a given name. Why shouldn't he broaden his scope to include the roadside movie? And why shouldn't those drive-in fences show a profit if their management feels they won't hurt business?



AT THE AIRWAY DRIVE-IN, Meadville, Pa., billboards form a colorful, practical barricade and headlight baffle. With its individually-lighted lucrative advertising panels, this fence more than pays for itself in a very short time.

Insect Control for Drive-In Theatres

A New Problem for Theatremen is Thoroughly Analyzed and the Latest Materials and Remedial Methods Listed

Outdoor moving picture theatres have presented their operators with a brand-new set of problems, the like of which were never encountered or even thought of in the days when indoor movies held full sway. In addition to fostering innovations like special viewing extremes and augmented concession facilities, the drive-ins have focused the attention of outdoor-theatremen on a gang of hoodlums bent on discouraging business. Operators have learned that ways and means must be found or invented for getting rid of bugs.

As some of the existing drive-in theatres represent costly investments, with half a million dollars being expended in constructing and equipping the more elaborate theatres, with the very latest and best in sound and projection equipment, and with attractive landscape gardening, and every known provision for the ultimate in patron comfort; small wonder then that death warrants have been issued for flies, mosquitoes, moths, millers, and all the other anti-social bugs.

This survey lists and describes insecticides whose properties have given them special value in drive-in theatre pest control. In the choice of materials for presentation here, two main purposes were considered: the control of flies, mosquitoes and moths, as constituting a patron nuisance primarily; and the control of plant-destroying insects, as constituting a decoration hazard. The final section of the article deals with methods of applying the insecticides and here emphasis is placed on economy of the operation, and simplicity of equipment required.

Insects, expert tormentors of long-suffering mankind, can make life miserable for both the owner and the patrons of a drive-in theatre. Mosquitoes slip in uninvited and unannounced, and deliver tantalizing, itching and demoralizing bites; flies congregate around the concession stand, giving the place a black eye by compromising its sanitary standards; moths lured on by an orgy of lumens fly up to the source of projection light and cast a show-wrecking collection of shadows on the screen; Japanese beetles and an immense horde of other destructive species work out on decorative shrubbery and other ornamentals.

To put it mildly, the drive-in operator has an insect problem on his hands and badly needs a helping hand. And that is not far away. Insecticides now on the market kill efficiently, thoroughly and economically when applied according to manufacturer's directions. Today's pest control chemicals are without a doubt vastly more deadly to a greater variety of insects than any which were available only a few years ago. By familiarizing



WHERE THE THEATRE is in a more-or-less remote area of swamp and brush, and lack of roads prevents normal vehicular spraying, the airplane, as shown below, is the only logical solution.

himself with the principal kinds of insecticides, their characteristics, and the methods for applying them, the drive-in operator will be able to cope intelligently with a problem that will be always with him.

INSECT-KILLERS

Whether the operator services his drive-in theatre personally, or calls upon an outside insecticide specialist and applicator, he will be guided in his final choice of material by a number of factors. Cost of the insecticide will certainly be one of the primary considerations. Over-all effectiveness and killing power of the chemical will have to be recognized. And there are less obvious questions to be answered. How long will the killing and repellent power last after the insecticide is first sprayed into the air? How will over-spray affect neighboring farms or other personal property beyond drive-in limits? Does it leave a residue that is poisonous to man or animals breathing the saturated air, or eating crops touched by the air-borne particles? Is its residue poisonous to surrounding soil? Is the applicator susceptible to poisoning when handling the chemical?

These questions and related ones point up the important requisites for an ideal insecticide—that it be an all-powerful killer of insects and at the same time be harmless to man, beast and plants. That's a tough combination of conditions to satisfy but, by and large, the agricultural chemical companies have come very close to achieving the impossible in this field. With the many potent insecticides now at his command, the open-air theatre man should be able to out-maneuver and out-guess even the most vicious insect hoodlums and do it without unbalancing the budget. The insecticides described below have been included on the basis of their ability to deal roughly with mosquitoes, flies, moths, and flower and plant pests. Both recently developed and old-established insect-killers have been listed. When they are known, possible dangers or disadvantages in the usage of an insecticide are mentioned. Methods of application are described in a later section.

Thiophos-3422

A powerful, all-purpose insecticide was recently developed by the American Cyanamid Company. THIOPHOS-3422—or O, O-Diethyl O, p-Nitrophenyl Thiophosphate, to give it its correct chemical name—was tested in 1947 by approximately 165 entomologists in 75 Federal and State Experiment Stations and their investigations disclosed an amazingly wide range of effectiveness for the new insect-killer.

For one thing, THIOPHOS-3422 is five to twenty-five times more potent than DDT, depending on the insect to be eliminated. At the same time it is compatible with DDT and, if desired, can be used in cover sprays with DDT. It is also compatible with wettable and dusting sulfurs, insoluble coppers, benzine hexachloride, rotenone, pyrethrum and lead arsenate. The compound is quite stable to hydrolysis in normal waters and is not readily destroyed by oxidation.

THIOPHOS-3422 is said to be effective against a wider range of insects (including flies, moths, and mosquitoes), mites and other lower invertebrates than any other chemical for the purpose. In fact, no species of insect has been found, in laboratory tests, that can resist its toxic action at concentrations now in use with established insecticides. Aphids are very easily controlled with THIOPHOS-3422 at economical dosages. In mosquito-larval control, the insecticide is said to be about 20 times more effective than DDT, takes less material to do the job, and is less likely to kill fish.

The chemical in technical grade is a liquid. After formulation into wettable powders it can be used as a spray. It can also be formulated for use as a dust. Spray formula for most conventional uses amounts to one pound of 25 percent wettable powder per 100 gallons of water.

From experimental tests at concentrations needed for effective control of injurious insects, it appears that THIOPHOS-3422 insecticide does not produce plant injury. In fact, it is evident that there is a rather wide margin between insecticidal action and plant injury. It is safe to use on roses, chrysanthemums, carnations, snapdragons, and practically all other greenhouse plants.

THIOPHOS-3422 does not create a residue problem since present evidence indicates that it remains effective for 5 to 12 days outdoors and disappears from crops almost entirely in 10 to 12 days, so that neither animals nor human beings eating the crops are harmed. On the other hand, it does seem to last long enough to kill delayed arrivals of some insects and to affect young stages of insects hatched from recently placed eggs.

Precautions should be observed in handling the material since it is definitely toxic. It can be absorbed through the skin, and prolonged exposure to a spray or dust could prove harmful. If the insecticide is to be handled for a long time, the operator, to be absolutely safe, should wear a respirator.

Marlate

With the discovery of methoxychlor, the active ingredient in "Marlate", DuPont chemists have developed an insecticide that is quick-acting, lasts a long time and is entirely safe to use. Manufactured as a fine white powder for use in dusts or in water suspensions for spray applications, "Marlate" controls many kinds of insects, brings death to many bugs. It kills flies and mosquitoes more quickly than does DDT by having the added advantage of a knockdown effect on these obnoxious common pests. Its killing power lasts several weeks, and it can be used with little danger to people, domestic animals (a herd of succulent beefsteaks may be grazing peacefully in an adjoining meadow) and plants. Tests on flowers—roses, for example—show remarkably little plant injury, even after relatively heavy applications. And no toxic residue is left on food products.

Methoxychlor is a slightly different form or analog of DDT. Although its insecticidal properties were discovered during the war years, other insecticides then were receiving the lion's share of attention. Methoxychlor was forced to bide its time until it had been proved safe to use by intensive laboratory and field tests. "Marlate" (the trade name of methoxychlor) is compatible with most common insecticides.

Chlordane

One of the most promising of the newer insecticides is Chlordane, applied as a dust or a spray. With this chemical, ticks have been controlled in wooded places, as along roadsides, by an application of 1 pound per acre. The larval of the Japanese beetle working on the roots of plants, especially grass, have been controlled by an application of 10 pounds per acre. In addition, Chlordane has controlled the mole crickets attacking golf greens in some of the Southern states. Chlordane has given phenomenal control of grasshoppers by the use of ½ to 1 pound of active ingredients per acre, applied as a dust or a spray. Residual effect of 11 to 16 days was also obtained. In some instances, residual properties are said to be effective for as long as five weeks after application. Final recommendations have not yet been established for all insect pests.

It is definitely known that this insecticide can be used with little or no injury to plant life. In fact, there have been reports of increased growth in plants after a Chlordane treatment but the biological explanation for this stimulation is not known.

Chlordane's toxicity to human beings is roughly equal to DDT's, considered on an equal weight basis. However, since Chlordane formulations are usually of lower concentration than those of DDT, the chances for ill effects to the applicator are considerably reduced.

DDT

The insecticidal use of DDT, or dichlorodiphenyltrichloroethane, was made in 1939 by Dr. Paul Mueller of the Geigy Drug Industries, Basle, Switzerland. In 1948 Dr. Mueller won the Nobel prize in medicine for his discovery.

In its pure form, DDT is seldom used as an insecticide. Most frequently it is dissolved and applied as a spray or mixed with a powder; and applied as a dust or a water spray. In concentrations of 2% or 3%, DDT has been effectively applied as a fog. The fog can be blown great distances and is quickly applied in such open-air amusement centers as stadiums, parks and drive-in theatres to free them of flies, mosquitoes, gnats, sandflies and other undesirable creatures.

DDT's toxicity to human beings is slight. In 1945, Food and Drug and Cosmetic Act Trade Correspondence stated that "No question is raised concerning the use of DDT on such fruits as apples and pears since it is less toxic than the other commonly used insecticides for these crops, such as lead arsenate and cryolite . . . For the present, the Food and Drug Administration will not take action against apples and pears contain-

ing not more than 7 milligrams of DDT per kilogram (about 2¼ pounds) of fruit."

As for DDT's continued effectiveness as a high-powered insecticide there is now some doubt. Only recently, the Bureau of Entomology and Plant Quarantine confirmed the suspicion that house flies in many parts of the country are developing resistance to DDT. This is an untoward achievement in the insect world that may very well be mastered by mosquitoes. If and when that time comes, DDT will have lost much of its value for the drive-in operator.

Krenite

"Krenite" is an effective water-soluble, dinitro spray containing as its active ingredient sodium dinitro-orthocresylate. Since it is not entirely in solution in concentrated form, it must be well mixed before using.

This material is especially effective as a dormant spray used to control insects and diseases on fruit trees, small fruits, and hardy deciduous trees and shrubs. "Krenite" is unique in that it will control both insects and diseases susceptible to treatment at the time of its recommended application. "Krenite" has its greatest application as a ground floor spray in areas where extreme disease infections are likely to occur and where present foliage fungicides alone have proved inadequate.

Loro

"Loro" is a thiocyanate contact insecticide especially effective for the hard-to-kill insects of ornamentals and fruit. Unlike volatile contact insect-killing materials, "Loro" is effective early in the season when temperatures are low, yet its effectiveness is not impaired by higher temperatures. With the exception of lime-sulfur, "Loro" is compatible with practically every type of fungicide and insecticide in common use. Small quantities—as little as one part to 800 parts of water—give excellent results when directions are observed.

Rhothane

"Rhothane" (DDD) is an insecticde of the same general order of effectiveness as DDT, yet it is said to be ten times safer than DDT to man and warm-blooded animals.

Lead Arsenate

Although not as strong as some other insecticides especially other arsenicals, lead arsenate is stable, remains well in suspension, minimizes clogging of screens and nozzles and provides an even spread over plant foliage. Once the spray has dried upon foliage it adheres, like paint, for a long time. It is compatible with such insecticides as: cryolite, fluosilicates, certain oil emulsions, self-boiled lime and sulfur, wettable sulfurs, bordeaux mixture, nicotine sulfate, and nicotine. Lead arsenate can be applied as a dust or a spray. It has been very extensively used to protect deciduous fruits, ornamental plants, and forest and shade trees from injury by chewing insects. Its great advantages are: its high degree of safety to plants, its stability in storage, and its spreading and adhesive qualities after it has been applied. Lead arsenate sprays should not be used near white painted surfaces since they tend to spot or discolor the white.

"Alcoa" Cryolite

"Alcoa" Cryolite is a fluffy, white, free-flowing insecticide. Chemically it is sodium fluoaluminate, an important member of the fluorine compound family. It contains 49% fluorine which is equivalent to 90% cryolite. Its uniform particle size and excellent adhesive quality combine to give maximum deposit and uniform coverage of plants.

In general, the fluorine compounds kill more rapidly than the arsenicals and in many instances they are more economical. They are less toxic to animals and human beings and tests have proved that they are safer to use on plants. Frequently they exercise a valuable repellent effect upon pests.

Cryolite is compatible with lime-sulfur, wettable sulfur, neutral fish-oil soap, summer spray oils, gypsum, lead arsenate and nicotine sulfate. Of all the fluorine insecticides available, sodium fluoaluminate ("Alcoa" Cryolite) is said to be the safest to use on plants. In addition, under proper conditions of use it does not injure plant foliage and it has no abrasive action on dusting equipment.

Pyrethrum

Pyrethrum is a very useful insecticide and is applied in dusts or sprays to control both sap-sucking and chewing insects which attack vegetables, ornamentals and fruits. Other uses include: the protection of valuable turf, such as golf greens; the destruction of sod webworms without injury to plants; the destruction of mosquito larval in pools, marshes and swamps without injury to fish, vegetation, or waterfowl.

The big advantage of pyrethrum is its high toxicity to insects, coupled with a very slight toxicity to plants and animals. However, it does not possess the stability of some of the other insecticides, and for this reason it is difficult to keep the stored concentrate for more than one season.

Other Control Methods

Some investigations have indicated the possibility of utilizing light to lure and destroy insects. This line of attack consists of precisely fixing the candle power or the exact color or portion of the spectrum which is attractive to the bugs. It has been noticed that many insects are much more strongly attracted by the blue portion of the spectrum and by ultraviolet than by the red rays. Once attracted to a specific spot, the insects can be quickly dispatched with a modified version of the electric chair—an automatic electronic grill shooting enough juice into contacting insect bodies to electrocute them.

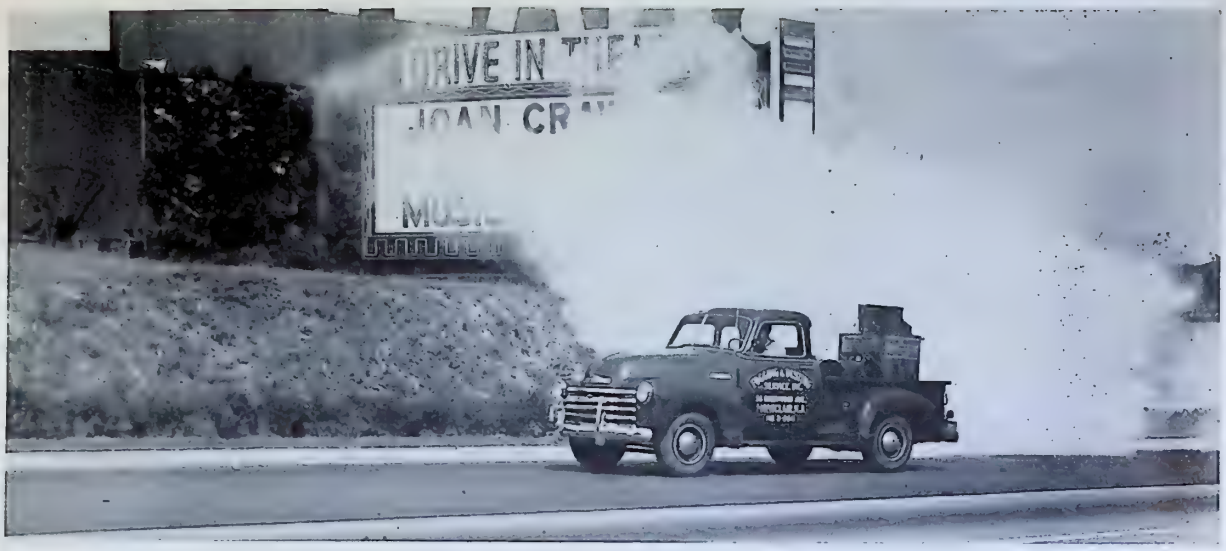
Plant growth regulators (hormones) have been widely used in horticultural work, including the control of pre-harvest drop of apples, the stimulation of root growth of plants and trees, the prevention of blossom and pod drop of beans, and recently the control and destruction of weeds. These same plant hormones now appear to play an added role—the suppression of insect damage to plants. Conversely, recent evidence reveals that certain insecticides may also act as a plant growth promoting substance. A stimulation and suppression effect in some plants has been found following treatments with DDT. Vegetables grown in the absence of insects showed that certain concentrations of DDT produced increased growth rates of the entire plants. The plants tested varied as to susceptibility to DDT. Excessive applications of DDT caused adventitious buds and the development of witches' broom symptoms quite identical to those frequently caused by conventional growth substances.

Finally, in closing this section, at least brief mention should be made of the repellents which are not necessarily toxic to the insect world but which act to keep insects away from a treated area. The repellents are usually included in a formulation with killer insecticides so that both repelling and killing result from the same spray. Outstanding repellents include dimethyl phthalate; and lauronitrile. Both of these chemicals are inoffensive to human beings but violate some insect sense of olfactory propriety.

METHODS OF APPLICATION

Almost as important as a death-dealing chemical is the method for getting it into intimate contact with the insects who fostered the clean-up project in the first place. In most locations, application will be by spray and the insecticide will be released into the air as a fog, not long before the first automobiles drive into the parking arena. It is claimed that some of the more recent insecticides will linger in the air in microscopic particles to provide lasting protection throughout the show.

Airplane spraying, which has come into vogue especially in weed control projects, will undoubtedly prove its value in those locations where multiple contracts enable the custom sprayer to quote minimum rates; or where it is deemed advisable to spray neighboring swampy areas not reachable by ground. It is no secret that single spraying jobs would confront the drive-in theatre operator with a prohibitive expenditure. Some recently introduced techniques in spraying indicate that the way is now opened to a low-cost and effective job. In fact, so simple are the new methods that it is even possible that, lacking a local service company the drive-in operator might appoint one or two members of his own staff to be applicators and thus include insecticide-spraying in his normal operating expenses. Or he might set up in business as a custom sprayer some ambitious local citizen with the obvious advantages of (1) free servicing for his own theatre area, (2) extra profits derived from maintaining a sound business in insect extermination, or (3) an added source of advertising and publicity. There are probably others but these will indicate the primary benefits. In the sections that follow, two examples of the new simplified techniques are described with the objective of showing how the job can be done with a maximum of efficiency but with a minimum of cost and labor.



THE MONTCLAIR FOGGER, A. M. Cochran, serves a number of theatres within a 100-mile radius, through a scientific and periodic spraying of various selected insecticides over a wide area of the surrounding foliage. This particular method has proven to be highly effective at 10 day intervals.

The Montclair Fogger

In Montclair, New Jersey, A. M. Cochran, former bomber pilot, operates a successful fogging and dusting service and exterminates insects without the aid of a conventional spray rig, an airplane, a duster, or any of the other elaborate props that usually accompany this business. In fact, Cochran delivers his knock - 'em - down, drag - 'em - out blows armed with an absolute minimum of equipment—one TIFA fog applicator and a truck to transport the machine. Cochran's background, a degree in chemistry at Virginia Military Institute and many evening sessions with entomological and chemical books and trade magazines, has given him an intimate glimpse into the life habits of many insect pests and contributed considerably to his success.

Among his many pest control activities, the servicing of drive-in theatres would naturally hold the greatest interest for theatremen. Cochran's practice is to secure contracts to fog open air theatres located in his service territory of about 100 miles around Montclair. Such theatres are usually located in sylvan areas that are pleasant to the eye but much too hospitable to mosquitoes and other pestiferous insects whose suicide squadrons dive on disgruntled patrons to make life miserable and the show less interesting.

A RELATIVELY SIMPLE TIFA fog applicator is mounted on a truck together with other special equipment. Cochran finds that the ideal time for drive-in theatre fogging is just after the closing hour at night, when air currents and night time conditions are practically ideal for spraying.



By thoroughly fogging the insect-ridden area just after the closing hour when air currents and night time conditions are best, the Montclair fogger has made both operators and patrons happy and—best of all—the results have proved effective over 10-day periods. Profitable operations of the insect exterminator also include neighborhood mosquito control.

One beneficial result of the use of simple equipment is that Cochran has been able to supply his custom pest control service at unusually reasonable rates. Although the estimated figure for drive-in fogging would be about $25.00 under a regular 10-day contract, the cost of similar work in other operations is known and will demonstrate how economical the insecticide service can be. For example, in neighborhood pest control projects in which DDT-bearing fog envelopes all the houses, trees and shrubbery, the cost to each householder is just $1.00 per treatment, and a forty-house area can be covered in about 40 minutes. Return trips are made approximately every two weeks. For fogging food storage rooms on passenger ships to control weevils and roaches which infest foodstuffs on board, Cochran has charged $25.00 for a job which once cost $100.00 when fumigation was the method employed.

With such a local service available, it is recommended that all ticket booths, concession stands, projection rooms and offices should be thoroughly fogged and then closed for a period of about four hours. This treatment about twice each year will effectively eliminate pest annoyance to employees, for the residual effect will last for a long time. Cochran



ABOVE is a large Microsol spraying unit mounted on the versatile jeep. The large opening of the spraying unit, through which insecticidal fog is propelled, insures the coverage of large areas with a minimum of time expended. The big cloud also insures ample spraying of all types of foliage.

is now offering this service to regular roofed theatres as an alternative to fumigation; and early tests have proven both satisfactory and economical.

Cochran's plans for the future involve buying another fog machine to meet the demands of his ever-increasing business; and eventually acquiring a helicopter in which he expects to install a TIFA for large scale insect extermination and control. His possession of a pilot's license and his thorough air training during the war will stand him in good stead here. In all his work, Cochran mixes his own formulations; and avails himself of all current technical literature to keep abreast of a rapidly changing field.

The Fog-Maker

In the equipment field, one of the important recent developments is a radically new applicator for insect extermination which is said to be the first portable fog-making unit and also the first machine capable of producing an insecticide fog without the use of heat, gas, steam, smoke or other extraneous materials.

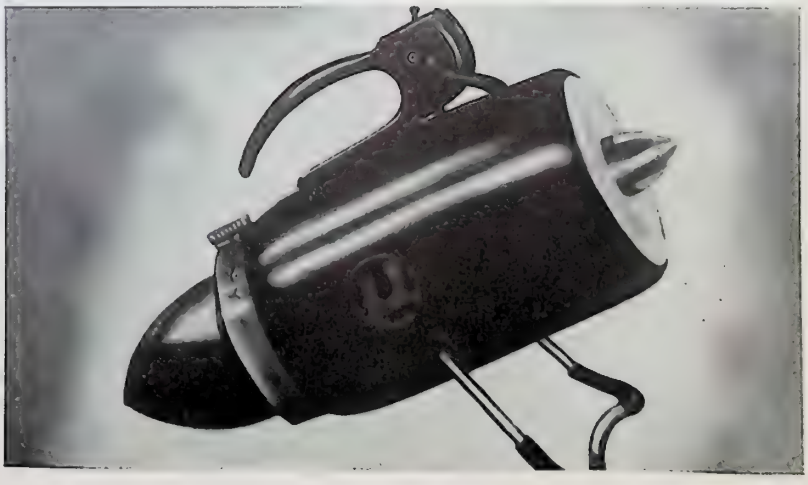
This machine is called the Hession Microsol Fog-Maker after its inventor, John W. Hession, Jr. Microsol, utilizing two electrically-powered rapidly whirling discs to produce a combination of centrifugal force and simple pressure draws the insecticide from the reservoir. It then breaks the chemical down into microscopically fine (15 microns) particles light enough to be air-borne and projects them in the form of swirling, billowing aerosol which will ride air and convection currents. The greatly enhanced effectiveness of an insecticide in aerosol dispersion is now generally established.

Development of the Hession-Microsol is said to have been successfully fulfilled after four years of laboratory and field experimentation, conducted in close cooperation with leading government authorities and scientists. Portable and weighing but 11½ pounds, one model is equipped with a translucent nylon reservoir of one quart capacity and is powered by a ⅓ H.P., 110-120 volt A.C.-D.C. Universal motor, air cooled and equipped with sealed bearings which require no maintenance. For drive-in theatre or similar use, a medium size unit of the same general design but gasoline-motor driven is being developed. This model will be mounted on a dolly and transported on a jeep to and around the work area.

The manufacturer claims a number of advantages for the Microsol machine. Particles are just the right size for a lethal dose. This means that the bulk of the micron-sized droplets in the aerosol produced by this machine are concentrated in the narrow range of sizes which years of research and field tests have revealed to be the death-dealing sizes for the insect enemies of mankind. And the Microsol equipment is said to be extremely rapid in getting its insecticide fog over the entire drive-in area. Built primarily of aluminum and powered by a specially-designed, totally enclosed electric motor, many of these units have been operated on eight-hour continuous runs, daily over periods of months, with no damage to the mechanism. The model avoids the use of fuel, steam and propellant gases, uses insecticides alone. The great waste of materials previously emitted as fuel smoke, or as greasy ineffective globules of liquid are said to be totally eliminated.

The materials and the methods are available. There is no reason for a drive-in theatre to lose money or patronage because of insect pests.

BELOW is the new Hession Microsol 202, an electrically powered device which provides a new and revolutionary method of producing continuous aerosol fogs from concentrated insecticides. Simple in design, the unit is portable, weighs 11 pounds, operates on house currents, and requires no special skill.



Laminated Wood Masts for Screen Towers

A Strong, Economical Material Offering Great Ease and Speed in Construction Where Low Budgets Rule

While the use of laminated wood arches in roofed-theatre construction is treated at great length elsewhere in this volume, the material offers additional consideration by the builder of a drive-in theatre. Laminated wood masts in the required lengths can be fabricated and their weather resistant nature makes them superior to telegraph poles or other wood members which supported the screen towers of earlier theatres.

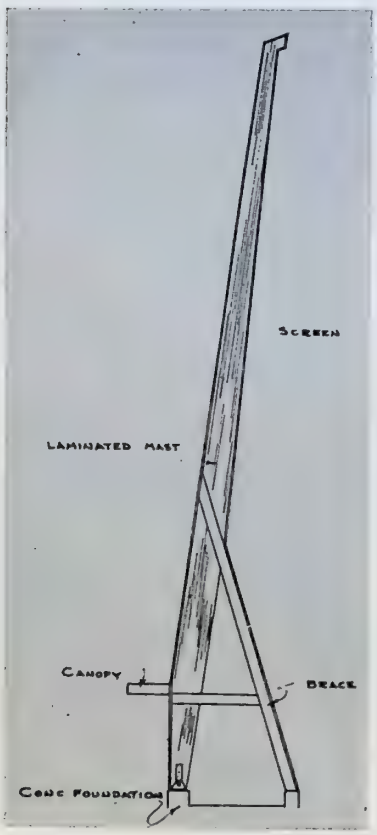
Another application of glued laminated wood which may find wide use is that of the laminated mast. It is generally recognized that the key feature of most outdoor, drive-in motion picture theatres is their majestic screen, which must be big enough and high enough to be clearly seen by people spread over an area many times larger than the most spacious enclosed theatre. Because of the need for great height and size, the erection of the structure supporting the screen has presented one of the most difficult engineering problems of outdoor theatre operation.

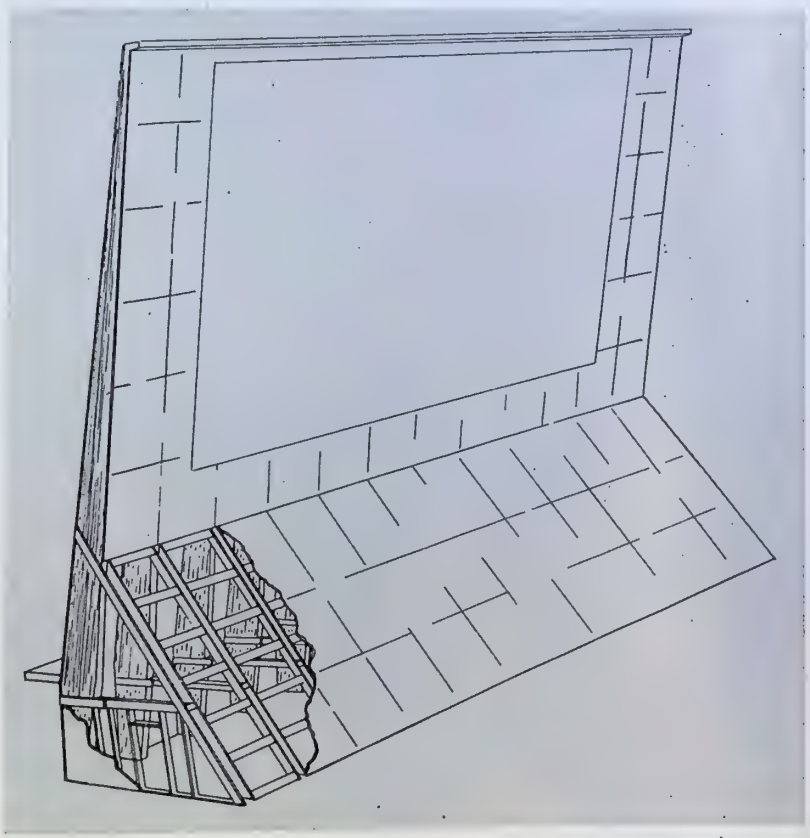
There is now available a simple, cost-saving structural member for forming the screen supporting structure. Instead of complicated structures of steel, wood, or reinforced concrete, the main support for the screen consists simply of a row or laminated wood masts, which are attached directly to the foundation and run to the full height required for the screen. The masts themselves, along with purlines that are fitted between them, provide nailing surface for attaching the transite or other material making up the screen.

Not only are erection costs maintained within economical limits because of the simplicity of the design, but additional savings result from the fact that the masts can be hinged to their foundation of concrete and laid in a horizontal position while the purlines and screen are applied. After the entire structure is completed on the ground, it can be swung into position by cranes. The extensive scaffolding and temporary bracing characteristic of conventional construction are unnecessary.

Diagonal braces help to reinforce the perpendicular masts, and at the same time give the structure symmetry and provide an enclosed space for offices, ticket booths, and storage space.

The tall masts forming the basis of the screen structure are among the most interesting examples of new products developed by laminating wood to form built-up sections of dimensions that otherwise would be impossible to obtain. And because of modern metal timber connectors and new glues applied by methods that produce an extraordinary bond, these masts, like all the other glued laminated structural members, possess great strength.





LOWER LEFT is an end view of a Rilco laminated wood mast anchored in upright position. Lower right shows the sturdy construction and the manner in which the braces form an acceptable office or storage space. Other adaptations are possible.

Survey of All Current In-Car Speakers

A Resume of Statistical Data, Styling, Construction, Weatherproofing and Special Features Claimed by Each

Outdoor electronics achieved increasing popularity in 1948 with new drive-in theatre in-car speakers appearing in a wealth of types and models. The following survey lists the offerings of the slightly more than dozen companies — which The Editors believe represent the principal sources of supply. Because an in-car speaker is a small and relatively simple piece of equipment, different areas occasionally come up with a new manufacturer. But those here analyzed have the virtue of national distribution, — and many are the product of old established industry names. Data presented includes (depending on the amount of information released to THEATRE CATALOG by each company): speaker construction and design, junction-box construction and design; weatherproofing, and special features claimed for the model. For more detailed information on any speaker— and especially in reference to its adaptation to a specific location—the reader is referred to the company which manufactures it.

AUTO VOICE

The National Auto Voice in-car speaker unit manufactured by the Drive-In Theatre Equipment Company, Inc., utilizes a 5¼" speaker employing a 1.45 ounce slug permanent magnet. Integral voice coil is wound on aluminum foil and the air gap provided is 1.5 thousandths larger than PMA specifications require. Design of the unit is unique in that the speaker is mounted from yoke position rather than from front, thus providing protection from direct rain. Volume is effectively and easily controlled by a knurled wheel located in a recess on the side of the speaker housing.

AUTOVOICE AC3 speaker with concession signal.



In severe testing, the Auto Voice speaker is claimed to have withstood 200 hours in corrosive salt spray without deterioration or damage to the securing glues. And after a drying period and another gruelling 100 hours in salt spray, reproduction remained unimpaired.

The junction box is finished in krinkled maroon. For additional protection the speaker cabinets are first rustproofed, then primed, and finally finished in automotive non-chipping enamel. In corrosion-testing, these cabinets are claimed to have withstood a 200-hour salt spray test.

The Auto Voice speaker is designed for both easy installation and handling. The special pipe flange at the bottom of the junction box will receive pipe up to 2.5" O.D., without threading; and the handle on top of the speaker unit enables each customer to remove and to replace the speaker cabinet with ease.

The most unique feature of this speaker is its talk-back system. A reversing button on the side of the cabinet permits any customer in the speaker-equipped area to call his or her order directly into the concession booth—this makes for both efficiency and increased comfort since the customer does not have to miss any of the show in order to restoke; and the candy and popcorn merchants know exactly where specific demands are arising. The patented talk-back system is said to be a very practical and convenient method for increasing concession sales.

Wiring for the talk-back system is not associated with the sound wires. It consists essentially of a separate shielded cable extending to each channel, paralleling the speakers in the channel and terminating at each channel's console. (Note: A channel in this system means an arbitrarily designated subdivision of the entire speaker area—see diagram).

When the reversing button is pressed, the reversing switch momentarily breaks the normal sound reproduction on that speaker for as long as the button makes contact. Operation of this unique signal system in no way interferes with the sound reception on any other speaker.

The system is practically foolproof. Pranksters are foiled by the use of number combinations and alphabetical arrangements which make it almost impossible to give false location data to the concession stand without it becoming instantly obvious. In fact, one operator has the car-hops themselves place orders from the field. If multiple orders come in on the same channel, the customers can all hear each other and the operator; and can take turns calling in their orders. To party-line telephone users, this will pose no problems.

Other Miscellaneous Equipment

Other associated Auto Voice equipment includes ramp control panels, ramp light transceiver for traffic control, and a separate in-car heating unit. This last item, the heater, is entirely separate from the speaker for reasons of safety. It is plugged into the post by a connector, that easily disconnects or pulls out if an absent-minded patron forgets to remove the heater from his car before he drives off. Otherwise, if the cable were severed, 110 volts on the loose could severely shock or even electrocute the guilty party or even an innocent bystander. Regardless of the choice of victim, resultant lawsuits could be disastrously costly. The manufacturer recommends that the heater be plugged in and removed by an attendant, thus eliminating customer-handling entirely.

The heaters are manufactured in 100 and 250 watt sizes. For both sizes, several circuits or feeders are required in order to carry the load safely. Usually, the load can be controlled by allowing only a limited number of heaters to be in use at the same time.

1948 AUTO VOICE CENSUS: Fifty drive-in theatres (location not given) equipped with Auto Voice in-car speakers.

AUTO VOICE AC 1 lower-priced speaker.





AUTOCRAT Deluxe speaker with concession signal.

AUTOCRAT

The Autocrat in-car speaker is manufactured by Autocrat, Inc. Each set of two speakers and one junction box is enhanced by all-weather construction with specially molded one-piece, tropical-impregnated cones. Junction boxes feature a quick fastener or clamp for posts and quick plug-in connections. Cords come in either coiled or straight grades. A sealed-in glass, concession light-signal on top of the junction box and with a separate switch on the speaker unit provides an easy-to-see, effective communication from patron to concessionaire.

Other Miscellaneous Equipment

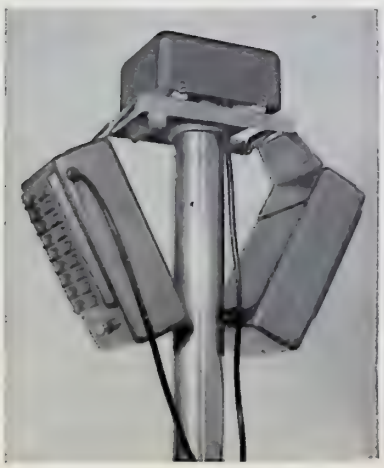
Heavy-duty ramp switch panels for the control, safety and testing of speakers, are available for drive-ins with capacities ranging from 300 cars to 1000 cars.

1948 AUTOCRAT CENSUS: (No installation totals supplied).

BRUNHOUSE

From the west coast comes a new model, the Brunhouse speaker (formerly known as the Conroy & Knowles speaker) manufactured by J. S. Brunhouse.

BRUNHOUSE speaker and junction box assembly.



The 4" speaker cone is of the latest water-repellant material. Speaker frame consists of a symmetrical stamping of heavy guage metal, plated after stamping and fitted with an Alnico No. 5 permanent magnet of 1.47 ozs. and a double-U type yoke for return magnetic flux. As the manufacturer states, this mechanism is not just a radio speaker adapted to drive-in usage, but a speaker designed specifically for its outdoor job. It is claimed that this purposeful design produces an extremely rugged speaker with a low mortality rate.

The speaker units hang at an angle from arms extending from the casting so that the louvres slant toward the ground and provide excellent weather protection even in a driving rain. The speaker cone is placed ⅝ of an inch behind louvres for added protection.

Speaker cases, hanging bracket, baffle and associated junction cover are all made of heavy gauge drawn duraluminum, an alloy of aluminum roughly equal to mild steel in strength. The junction box casting is of aluminum, mounted atop the pipe support and held at the proper height by a cast-in shoulder, the casting being secured to the pipe by two Allen set screws.

A special live rubber moulded bumper at the rear of the speaker cushions it in contacts with the supporting pipe and minimizes the element of rattle when the speaker is hung from the car window with the housing against the glass.

Acoustical properties have received due consideration. Manufacturer states that the area between the baffle and louvres provides an air column designed to match the cavity provided by the housing and its associated breather. This proper acoustic balance is said to greatly enlarge frequency range of the reproduction.

1948 BRUNHOUSE CENSUS: Served in 11 complete installations in California; and was being utilized to replace damaged or worn speakers in 4 other drive-ins.

DE VRY

Introduced in 1948, the new DeVry in-car speaker, manufactured by the DeVry Corporation; is an interesting example of modern design applied to drive-in electronics. The speaker housing, constructed from an aluminum alloy of high tensile strength is of the infinite-baffle type. It is finished in popular, weather-resistant hammerloid. All requisite hardware is of stainless steel. The speaker cone is chemically treated for weather resistance.

Sound is transmitted through a series of six curved louvres, carefully arranged to prevent water from reaching the speaker cone inside the housing. Condensation moisture drains off through holes bored in the housing.

The speaker unit, a five-inch Alnico 5" permanent magnet, is equipped with a wide range of "lows" for music and "highs" for voice. The volume control covers a broad range of frequencies. As the manufacturer states, "Every advancement in design, mechanics and electronics was utilized to the fullest degree to attain the highest possible efficiency of operation and matchless high fidelity of reproduction in the new speaker."



DE VRY speaker and junction box assembly.

For ready attachment to car windows, sunshades, rear-view mirrors, or lap robe cords, the handle on the back of the speaker housing features simple grip design. Car windows can be kept closed during inclement weather, a factor that could extend the active operating season in many localities.

The entire DeVry speaker assembly, a compact unit for easy handling, is made for mounting on either a 1½" or a 2" speaker post. The terminal box is finished like the speaker brackets and handles. By the substitution of lugs for solder, dismantling of speaker connections is facilitated. The matching line transformer in the weather-proof terminal box is vacuum impregnated to minimize breakdown and corrosion.

Other Miscellaneous Equipment

Absolute control over the distribution of sound to each ramp in the drive-in is claimed for the new ramp switch panel. Although the standard DeVry panel is designed to accommodate 15 ramps, panels for any number of ramps are available on order.

Connections are by terminal blocks. Constant loading is stated to be maintained on the amplifier at all times, regardless of whether the individual ramp lines are turned on or off.

1948 DE VRY CENSUS: "In many of the nation's largest drive-ins."

DIT-MCO

DIT-MCO is the trade name for speakers manufactured by the Drive-In Theatre Manufacturing Company. Two of three principal models are in-car types; while the third is a standee speaker designed for use near the screen where there may be seats; or for use on back ramps where trucks may be parked.

The large Dit-Mco in-car speaker is approximately 7½"x5"x3" deep. Of cast aluminum construction, it is protected and decorated with two coats of baked enamel, hammerloid finish.



DIT-MCO Junior speaker and junction box.

This unit uses a 4"x6" speaker, giving greater cone area than is sometimes available. And it is almost entirely tamper-proof. The speaker grill is backed by a fine wire mesh to prevent damage to the speaker cone from pencils, nail files and other improvised weapons sometimes thrust wantonly through the louvres. An L-pad volume control has a brass shaft and ferrell. A coiled cord, anchored in the case with rubber inserted constant pressure wire clamps, connects the speaker and junction box.

The junction box is of heavy cast aluminum, mounted on the speaker post by means of two Allen 10-24 cup point set screws. Of streamlined construction, it contains the line transformer which is not only efficient but contains taps to match ten different line impedance values. These leads from the transformer are readily available by means of heavy terminal-strip screw lugs. In addition, the transformer has two independent speaker windings as secondaries. If one speaker should fall, the other would not be affected.

For the operator interested in a lower-priced and slightly smaller speaker unit, there is a model available which is approximately 6"x4⅜"x2½" deep. This junior model features brass-shaft, wire-wound volume control, weatherproof speaker unit, soldered magnet, cast aluminum case, and baked hammerloid finish. Supplied with cast aluminum junction box and line transformer, the entire unit mounts on any 1½" pipe or 2" post.

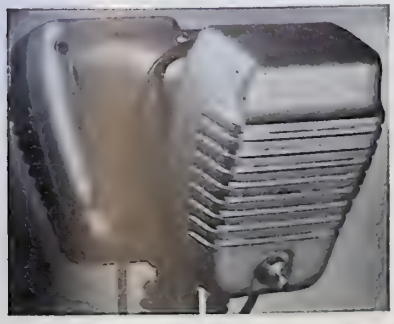
In parking areas not attainable by conventional in-car speakers, the utilization of a standee speaker will enlarge the effective range of drive-in sound. The speaker unit of the standee model is of waterproof construction and the cast aluminum case, being fabricated from one of the toughest of the industrial metals, can withstand practically any amount of weather and patron abuse.

Approximate size of the speaker is 8"x10½"x5" deep. Said to be absolutely tamper proof, it incorporates a brass shaft, wire-wound L-pad type volume control, which can be pre-set to any desired volume level. The unit is designed to mount on any 1½" pipe or 2" post.

1948 DIT-MCO CENSUS: (No installation totals supplied).

DIT-MCO Standee speaker for playgrounds.
DIT-MCO Senior speaker and junction box.





HAN-D-VOX

The all-metal Tarrytown-HAN-D-VOX indoor-outdoor movie speakers are distributed internationally by J. E. Robin, Ind. for both regular theatre and drive-in installations. Company says that its objective is to "get that movie or recorded sound where you want it and as you want it."

Each unit, fully enclosed in a vertical non-breakable, cast-aluminum case, contains a 4 inch permanent magnet speaker and a constant-impedance sound control or special L-pad whereby balanced line impedance is claimed to be matched and maintained at all times for distortionless sound—from a mere whisper to a commanding volume, with resonance of casing critically proportioned for proper tone quality. The unit contains a waterproof speaker and the company claims that the speaker can be soaked in water and subsequently perform as well as before the dunking. Moreover, the equipment is said to be so rugged that a car can run over the unit without damage.

Speaker housing, made of a non-breakable cast-aluminum case, is provided with a rubber-covered bracket which hangs on a post cap when not in use, or, on the open car window when serving its audience. Each unit has its own loudspeaker control, allowing volume to be regulated to suit individual taste. For drive-in theatres, the Han-D-Vox is available with cast-aluminum post cap which fits on standard 2" iron pipe.



HAN-D-VOX speaker and junction box assembly.

Manufacturer claims minimized replacement and negligible maintenance for this speaker.

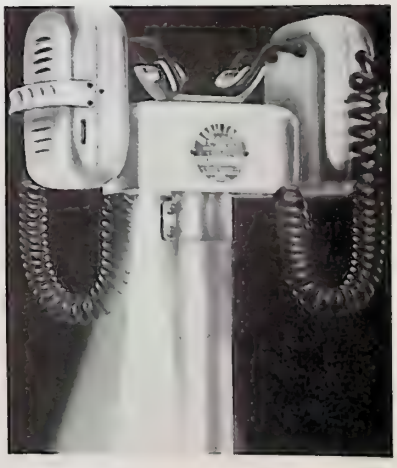
1948 "HAN-D-VOX" CENSUS: "Many installations".

MOBILTONE

Another product reflecting America's recent electronic strides is the Mobiltone in-car speaker unit, manufactured by Theatrecraft Manufacturing Corporation.

The speaker cone, 5¼ inches in diameter, is a General Electric all-weather unit with aluminum voice coil mounting. With the cone itself impregnated with a waterproof substance, and the speaker unit frame built of steel corrosion proofed with a combination zinc and tin coating, the entire speaker unit is claimed to be thoroughly insulated against the three primary agents of corrosion and deterioration—moisture, oxygen and carbon dioxide. A cork gasket surrounds the entire face of the cone and fits tightly against the outside housing. The manufacturer states that in this instance cork has proved to be much

MOBILETONE speaker and junction box assembly.



more durable material than an ordinary pressed paper gasket.

Weatherproofing has been successfully built into all parts of the Mobiltone speaker. Housing of the entire unit utilizes deep drawn, die stamped sheet aluminum—anodized by a special process which etches into the aluminum a tough, synthetic oxide film ten-thousandths of an inch thick. This thin layer shuts out completely all ordinary corrosive elements present in the atmosphere. All joints are fastened with aluminum rivets except in two places where stainless steel screws are specified. However, the use of stainless steel prevents bi-metallic corrosion and the entire unit presents a continuous corrosion-proof surface with an enduring lustrous finish.

By mounting the volume control on the side of the speaker and allowing only a small part of its circumference to protrude, the manufacturers have attempted to forestall damage from both vandalism and ordinary rough usage. Other special features include: a slip-over flange on the bottom of the junction box which is adjustable to any pipe from 1¼ inches to 2 inches and which eliminates the necessity for threading the pipe; the hanger brackets for placing the speaker unit in the car, which are rubber coated and equipped with a rubber bumper on the bottom of the speaker to eliminate damage; a built-in parking light, standard with each unit which can be focused from spot to flood; and a 12-foot coiled cord lead on each speaker.

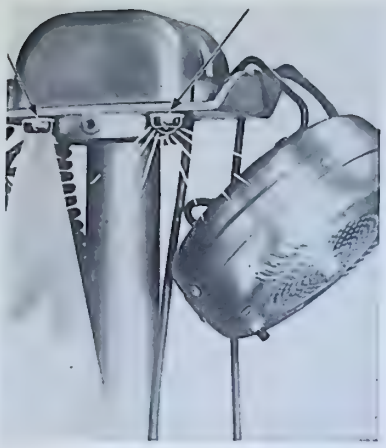
The confidence of both Theatrecraft and General Electric in the efficiency and ruggedness of the 5¼ inch speaker cone has led to a guarantee of this unit by both companies.

Another Mobiltone model scheduled for installation in a North Carolina drive-in in the latter part of 1948 includes all the above standard features with one exception—the speaker for this model is a 4 inch General Electric all weather cone. Reason for the smaller speaker is the incorporation of a heater unit in the top portion of the speaker case above the speaker cone. This heater, also made by General Electric, is of calrod incanel construction and is said to be waterproof. The entire heater unit is encased in a ceramic material which eliminates the conduction of heat to the speaker cone. A fan is mounted behind the unit to project the generated heat into the automobile. The heater is operated by a switch on the side of the case opposite the potentiometer. The Koiled Kord running from the junction box to the speaker is twelve feet in length and carries three heavy-duty conductors.

1948 MOBILTONE CENSUS: Approximately 48 installations.

MOTIOGRAPH

Motiograph's in-car speaker, a circular model with perforations in the front, is sturdily constructed to survive rough handling from Tarzan-inspired drive-in patrons. Yet it is said to be easy to handle and pleasing in appearance. For effective protection against the weather, the speaker unit itself is weatherproofed by a special process



MOTIOGRAPH speaker with concession signal.

while the steel housing is bonderized (phosphate coated) for ideal paint adhesion and then finished in baked enamel or brushed cadmium. For automobile protection, the speaker hooks are rubber-plated.

The speaker unit, utilizing a 5 inch cone, is designed with large mechanical and electrical safety factors. Efficiency and ruggedness are obtained through the use of welded magnetic structures and heavy duty Alnico-5 permanent magnets. Individual speaker volume controls are of the constant impedance type, and amplifier loading, therefore, remains the same independent of control settings. This factor is said to insure optimum amplifier performance and to eliminate the need for constant readjustments if there are changes in the number of speakers in use. Controls are supported by brass splash screens and are therefore cushioned against mechanical damage; control knobs are machined from solid aluminum for strength and appearance.

For ease of installation and speed in changing speakers, the speaker cables are provided with spade terminal lugs. The speakers are quickly disassembled if the need arises, but the use of patented screws discourages curious patrons from taking them apart with a coin, knife, or ordinary screw driver. The brass splash screen immediately behind the perforated front of the speaker housing is designed to prevent damage to the speaker unit from the insertion of foreign objects. This splash screen also is said to keep insects and driving rain from reaching the speaker unit cone.

Motiograph in-car speakers are available with plain rubber-covered cables and a companion steel cable covered with a waterproof casing.

Motiograph's junction boxes are equipped with a special pipe flange which permits them to be fastened to a wooden post or used on unthreaded pipe with an outside diameter of 2" to 3½". The SE-7545 model is made from two strong and bright aluminum castings and the manufacturer claims that it is completely corrosion-proof, requiring no periodic painting to maintain its pleasing appearance.

The top casting covers the impedance matching transformer and terminal block for the speaker and feed cables. The lower base casting fits the post support and has two integral speaker hooks which are said to allow easy replacement of the speakers after use. This speaker hook location is said to permit ready access for servicing of the transformer, terminal block and speaker, and feed cables without the necessity for dropping the speakers on the ground. The two castings of the junction box are joined tightly together by two strong, readily accessible bolts, making a weatherproof enclosure for the transformer and terminal block. It is said that the electrical circuits of the box are so arranged as to prevent accidental short circuits in speaker cables from affecting other junction boxes on the same ramp feed circuit.

To provide for a lighted speaker post area and a means of signaling a concession attendant Motiograph furnishes a version of its junction box with a white light to shine down upon the junction box support and also a red light to signal the car hop. The post lights are operated from the projection building, while the concession lights are turned on and off by the car occupant who operates a push-button switch on the speaker for either continuous or intermittent lighting.

A single un-insulated bare copper wire to each box position, in addition to the usual two-conductor insulated parkway cable, is sufficient. The amount of light produced by the base and signal lights is entirely sufficient for their purpose, but not enough to cause objectionable glare. The relatively low lamp supply voltage meets the safety requirements of the National Electrical Code without any necessity for expensive separate standard voltage lighting circuits to each box position.

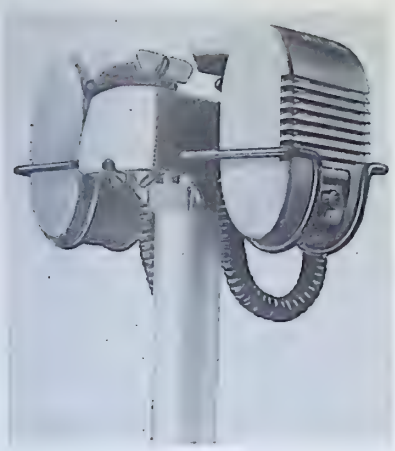
Special features claimed by the manufacturer for this junction box include: an impedance matching transformer fully impregnated against moisture so that rain, condensation, or early morning fogs do not make the transformer inoperative; patented line terminal lugs into which the straight, skinned ends of the ramp feed cables can be locked in a matter of seconds.

1948 MOTIOGRAPH CENSUS: (No installation totals supplied).

RCA

RCA's in-car speaker has been placed in a new housing designed by John Vassos, the nationally known stylist, for extra visual appeal and greater ease of handling; and a new speaker neck insures immediate and fool-proof attachment in the car.

After extensive acoustic tests, a 4-inch speaker mechanism was chosen for the RCA equipment since it gave the best performance within an enclosure of convenient size. It is a recognized fact that the low-frequency sensitivity of an enclosed-type speaker is a function of the size of the enclosure, as well as the size, mass, and stiffness of the diaphragm.



RCA speaker featuring roadway and post light.

Furthermore, it is claimed that at the volume level normally used in drive-in theatres, the response of the 4-inch mechanism is superior in tonal quality to that of larger speakers when these are cramped into small housings for the purpose of keeping down the overall size.

The magnet of the 4-inch mechanism weighs 1.47 ounces. The larger magnet is said to increase the sensitivity of the speaker and to allow for greater-than-standard clearance for the voice coil in the gap.

The mechanism of the 1949 in-car speaker is again processed with the same compounds and components which so successfully withstood a three-day immersion in the flood waters of the Susquehanna River at the Tri-City Drive-in, Endwell, N. Y.; where all but six out of 697 speakers performed satisfactorily after the flood was over.

Subjection of the RCA speaker to the standard 200-hour Navy salt-spray test —roughly the equivalent of five years of use under adverse weather conditions —is one of many measures used to insure a completely satisfactory product. As a matter of fact, this speaker has survived tests simulating all kinds of weather in the United States, high and low humidity, heat, cold, rain and snow.

All metal parts of the mechanism are protected by extra heavy cadmium plating. A wider-than-standard gap is utilized to overcome the expanding and distorting effects of moisture. The impregnated cone or diaphragm is water-proof and fungus-proof; and all cement joints are made with a special thermo-setting cement.

There are small drain holes in the bottom of the RCA speaker, allowing for drainage in the event that wind-driven rain enters the speaker grille, or moisture condenses within the case during extreme changes in temperature. The case is made of die-cast aluminum and has a baked finish. The combination of metal and finish provides effective protection against humid or other corrosive conditions.

Extra strength is gained through the use of the aluminum die-cast case. In testing, automobile wheels were run over it several times without damaging the speaker. Both case and speaker were also designed to withstand severe drop tests. Another feature of the RCA speaker is the recessed position of the volume control which protects the knob from possible breakage. The volume control, constructed according to Navy specifications, is tamper-proof.

RCA has recently developed a new junction box with a built-in roadway and post light. The same lamp is directed through two lenses, one of which beams light down the junction box; the other illuminates the darkened roadway next to the ramp. By utilizing the new junction box equipped with this unique roadway and post light, it is said that the drive-in operator can eliminate the need for additional lighting equipment heretofore considered essential for use during the show. One beam of the two-way ramp light illuminates the junction box mounting post and an area at the base of the junction box post. The other beam, projected outward at an adjustable angle to the rear of the car space it serves, throws a clear elongated area of light onto the roadway. This exclusive RCA two-way ramp lighting system, according to the RCA Theatre Equipment Section, provides an unobtrusive soft lighting pattern over the entire drive-in theatre area, and is said to be as effective as a group of ushers in lighting the way for the customer seeking his parking space. The light sources are hooded, protecting the eyes of the drive-in customer from glare. Optional equipment includes a concessionaire signaling device.

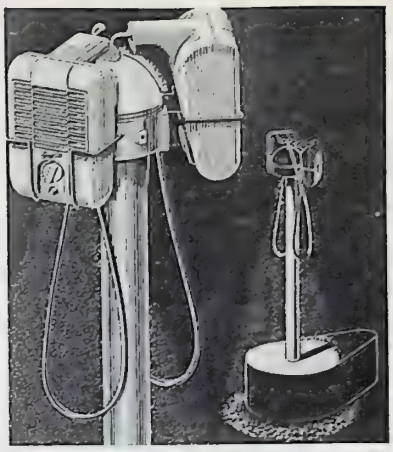
The junction box housing is a heavy aluminum die-casting in two sections, with baked-on enamel finish. The lower section, or tray, has the pipe-mounting flange cast into it as an integral part of the box, thus eliminating the need for purchasing flanges and the extra cost of asembling. Deluxe, heavy rubber covered, rigid steel wire baskets of improved design require no mounting hardware, as the baskets fit into slots in the bottom of the junction box, and are locked in place and held rigid by the cover.

1948 RCA CENSUS: (No installation totals supplied).

SIMPLEX

The new Simplex speaker utilizes General Electric 4″ PM speaker units, which permit the drive-in patron to enjoy high quality sound reproduction regardless of weather conditions. The speaker case is constructed of diecast aluminum alloy which is strong enough to withstand a tremendous amount of careless handling, yet is light enough for a child to carry, claim the manufacturers. A specially designed supporting handle permits speaker mounting on the car regardless of the window position so that the window may be wide open on hot nights and almost entirely closed on rainy nights. The entire case has a shiny gray baked-on finish.

The GE speaker units are weatherproofed to permit their use in any and all locations. Aluminum voice coil



SIMPLEX speaker with concession and downlight.

mountings, a radical departure from the common paper base type, reduces to a minimum the objectionable voice coil rasp.

Every Simplex speaker is equipped with a smooth operating constant impedance volume control. The patron may easily adjust the volume to his individual taste with a slight twist of the knob.

In addition, the new Simplex speaker is available with or without concession call signal facilities. For theatremen who wish to use the concession call feature, a handy push button switch is located on the front of the speaker case directly below the volume control knob. Any patron wishing concession service merely pushes the button which lights the signal on the junction box. Another push on the same button turns the light off.

The Simplex junction box is adaptable to all types of post mounting which permits the drive-in owner to use locally available materials for greater construction economy. The lower casting is designed for mounting on a 4″x4″ wood post or a 1½″ or 2″ pipe. Threading and flanges are unnecessary. The unit is merely slipped over the end of the pipe and locked in place with an allen-head setscrew. Cable connections are quickly and conveniently made to the terminal strip which has been designed for every type of connection common to the electrical field. The matching transformer supported to the terminal strip out of the way of external wiring is vacuum impregnated to make it almost permanently weatherproof.

The manufacturers also claim a unique method for hanging the speakers on the junction box. Speaker baskets are swung back at an angle on both sides of the unit so that it is possible for patrons to see them in silhouette when returning them during a performance. Two separate applications of neoprene are vulcanized to the basket rods to assure a tough protective coating.

Concession call signals and post lights may be had as integral parts of the coupling units or as optional equipment whenever desired. The unit may be mounted on the post in an off center

position to permit a 'down-light' effect for the post light. The light is focused to throw a beam on the front of the concrete base and provides sufficient illumination to adequately mark each post position.

1948 SIMPLEX CENSUS: (New and no installations possible before 1949.)

SOUNDMASTER

The Soundmaster in-car speaker is a product of the Ballantyne Company. Of completely new design, the 4" speaker is made especially for Ballantyne by one of the largest companies manufacturing speaker equipment. It features a press fit ground magnet guaranteed against slipping and warpage, and a speaker cone, completely weather treated. Volume control centers in a wire-wound 340 degree rotational knob with positive stops.

The speaker unit itself is spring mounted in the case, in a floating torsional mount to eliminate pull on the speaker cone with consequent warpage and structure distortion. The cast louvres are double strength and it is said that it is practically impossible to damage the case by dropping it or running an automobile over it. Although the speaker comes equipped with regular cords, coil cords can be supplied at a small additional fee.

Made from heavy JAN sand cast aluminum with 20,000 lb. per square inch tensile strength and coated with a baked-on bronze hammerloid finish, the Soundmaster speaker housing presents high resistance to corrosive influences. To prevent water from collecting, the case has full drainage both at the speaker cone level and at the bottom. The entire speaker is unconditionally guaranteed for one year from installation with a nominal replacement feature thereafter.

The junction box, also of sand cast aluminum with hammerloid finish, is assembled so that it can be opened from the top for checking of interior mechanisms. It has a heavy duty matching transformer and is also equipped with a terminal strip for easy connecting and disconnecting of speakers. This box is built to accommodate any standard size post—2", 2½", or 3"—with adaptors supplied for posts of other diameters. At a small additional cost, the junction box can be equipped with adjustable downlights.

SOUNDMASTER speaker and junction box.



The Ballantyne Company takes pride in these special features of the Soundmaster speaker: The speaker is baffle-mounted in the case—there is a cast-in-metal collar which recesses the speaker ¾ of an inch from the front of the case and produces a full baffle effect for improved tonal quality; it is reported that the bronze hammerloid finish gives the drive-in a beautiful appearance with the speakers standing out against the background in daylight hours; the case is built for effective drainage as described above.

1948 SOUNDMASTER CENSUS: (New and no installations possible before 1949).

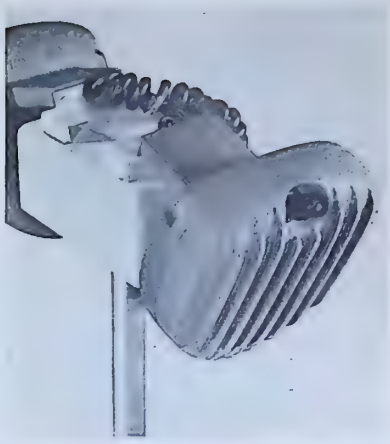
THEATRE EQUIPMENT COMPANY

The Theatre Equipment in-car speaker, manufactured by the Theatre Equipment Company, is supplied in one basic model, designed and engineered by the Permoflex Corporation. The design includes a treated dustcap to prevent moisture from penetrating; and a speaker cone made of Kopak especially impregnated with a weatherproofing compound to give it great wet strength without affecting the quality of the reproduced sound adversely.

For optimum sound reproduction, the speaker utilizes a special heavy magnet which gives it a frequency response range of 140 to 7500 cycles. This successfully meets the frequency response requisites of the conventional 35 mm. soundtrack. Speaker design enhances low frequency response; and vents are dimensioned to create the highest apparent sound level possible. The company claims that the all cast aluminum casing makes the speaker practically non-resonant at any frequency. And the grill and speaker mounting, using no screws or nuts, is said to eliminate rattles and mechanical vibrations.

Since case and cover material is of cast aluminum, weather resistance is automatically built into the speaker. However, salt water and corrosion proof treatment are available on special order, if the proposed environment is especially humid or salty.

A specially designed hanger plate makes it possible to hand the speaker in the automobile door with the window all the way down. Design involves the use of a highly brittle alloy of aluminum for the hanger plate as protection in those instances when absent-minded or impetuous drivers take off without first replacing the speaker on its accustomed stand. When a premature exit is made, the hanger plate fractures and the speaker pops out of the car before the electrical connecting cord is damaged. Hanger plate is comparatively inexpensive and easy to replace.



THEATRE EQUIPMENT CO. speaker assembly.

Volume control features positive mechanical stops which do not use the electrical arm for a stop. The cord into the speaker is secured with a patented strain relief and the other end terminates in a special plug with a cap of bar aluminum, having very heavy walls and protected by a method of clamping the wire to afford a measure of strain relief. The plug is of 3-circuit type and the ground is not used. This keeps both sides of the ordinary circuit above electrical ground and divides in half the possibility of accidental shorts.

The junction box case is constructed of cast aluminum, in only two pieces. Top part has cast-in "ears" for the hanging of the speaker with no effort or inconvenience. The "ears" have been designed to prevent the speaker from being knocked or blown off the junction box.

Inside, the transformer is of several times the power rating required for activating the two speakers and has been vacuum-impregnated and packed to a hard varnish finish to afford the greatest possible protection from humidity. As a protection against coil to coil shorts, the transformer coil is completely insulated from ground by a mounting on micarta strip.

The bottom of the junction box can be furnished with mounts for a wood post, 2" pipe, or 2" tubing, with other types of mounts available on special request. The pipe mount is not of the thread on type but uses two hardened set screws for fastening.

The external finish of the equipment is of Navy-gray wrinkle. This, it is claimed, is the most durable finish that the company has found. It has a pleasing appearance, and does not readily show marks. If desired, other finishes can be supplied. Special "down" lights and independent "call" lights can also be built into the unit.

1948 THEATRE EQUIPMENT CENSUS: 16 installations in the Ohio territory.

Underground Cables for Drive-Ins

A Hidden, but All-Important Part of the Drive-In Structure is Brought Above Ground for Analysis

Among the many products designed and developed especially for drive-in theatres are underground cables — out of sight during their active life but always the indispensable and rugged nerve system and arteries of outdoor sound pictures. In the following survey, some outstanding cables which are currently in use are described, and features of interest to the drive-in operator, listed. As a general rule, because of resistance, No. 16 wire would be too light for use as a conductor in drive-in theatres; No. 14 wire would be used only up to a capacity of about 400-500 cars; and No. 12 wire would be used in all over 500 cars. The equipment manufacturer or a competent electrical engineer should decide. One of the most important properties of the underground wiring system, in its buried life, is its non-hygroscopicity or resistance to moisture. Therefore, this phase of each manufacturer's cable receives special attention. In addition, ease of handling and installation is pointed out; and splicing techniques are included in the discussion wherever this information is available.

G. E. FLAMENOL

According to information supplied by the Apparatus Department of the General Electric Company, their wire and cable engineers recommend G. E. twisted pair, SI-58264 heavy duty FLAMENOL, for use underground between projection booth and individual speaker posts at drive-in theatres. Its underground durability makes it a natural for outdoor applications.

Twisted pair SI-58264 is composed of two No. 12-AWG or No. 14-AWG copper wires protected by FLAMENOL insulation. For identification, one insulated conductor is ribbed. It is said that the FLAMENOL jackets used on these cables make them more efficient and easy to splice and handle.

FLAMENOL, which refers only to the flexible jacket or insulation and not to specific types of cable, is the original plasticized - polyvinylchloride insulation and was placed on the market prior to 1936. Its impervious nature provides ideal protection for drive-in theatre underground cables. FLAMENOL is chemically inert and therefore practically ageless. With FLAMENOL, drive-in low-voltage circuits are protected from all these old enemies of electrical insulation: air, acids, alcohol, alkalis, grease, ozone, dirt, oils, sunlight, and water.

Cable insulated with FLAMENOL is easy to work. It strips easily and cleanly either with a stripping tool, or with a hand-manipulated knife; there is no braid to fray; therefore, it saves installation time and simplifies cleaning. Since it is supplied in seven colors and inlaid stripes, color coded according to NEMA standards, circuit tracing is facilitated, and installation and maintenance time are shortened. It requires no additional protective covering—its small diameter saves space. Because of its smooth hard finish, it can be pulled easily through conduits or ducts. And FLAMENOL is said to be flameproof; in fact, it owes its name to its unusual flame resistance—the insulation will char in an open flame, but will not support combustion. It has plenty of strength. According to latest available reports, FLAMENOL Style FL cable has a minimum tensile strength of 1500 pounds per square inch and a minimum elongation of 100 per cent.

In general, the manufacturer states that "FLAMENOL wire and cable are recommended for use in all circuits handling up to 600 volts, wherever durability because of resistance to moisture, age, weather, acids, alkalis, and oils is desirable, or where small diameter is important, or where the possibility of fire being spread by wire insulation must be eliminated."

Twisted pair No. 14 AWG SI-58173 is supplied in carton packed stock coils in 500 foot lengths and its approximate net price per 1000 feet in quantities from 500 to 2499 feet is $46.00. From 2500 to 4999 feet the net price per 1000 feet is $42.00; and from 5000 feet up, approximately $38.20. Naturally No. 12 AWG is higher.

Simplex-ANHYDREX

A number of drive-in equipment manufacturers recommend a cable manufactured by Simplex Wire and Cable Company. This underground cable is manufactured in both No. 12 and No. 14 and it is reported that it has proved satisfactory in drive-in applications.

The Simplex-ANHYDREX underground cable is a twin conductor, up-to-600 volt cable listed by underwriters as Type USE, each conductor having seven strands with 3/64" rubber insulation, and in turn covered with a 5/64" neoprene jacket. The basic design in detail, includes: solid or stranded, tinned copper; insulation—standard walls of ANHYDREX and a rubber-filled tape #6 and larger, a varnished cotton braid #8 and smaller, cable coil filled with waterproofed jute; and an outer sheath of hard - service, abrasion - resistant neoprene.

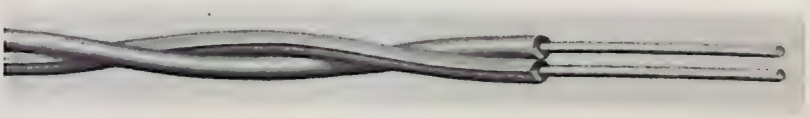
Neoprene sheaths resist the action of oils and acids. They do not crack when exposed to sunlight and they are flame-resistant. For circuits partially below and partially above ground, one length of Simplex-ANHYDREX is said to meet all requirements fully—without splicing.

The manufacturer states several reasons why this underground cable has met with approval. For one thing, Simplex-ANHYDREX cables have no outer fabric coverings, tar, or pitches to deteriorate in acid or alkaline waters, or to clog ducts and become frozen in. And moisture resistance—an important factor—is high. The rubber insulation is the ANHYDREX low water absorption compound developed for Simplex non-leaded submarine cables. This type of insulation, a product of Simplex research, is designed to withstand constant immersion in water with negligible effect on its electrical and physical properties.

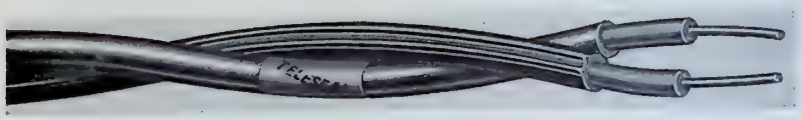
An additional advantage claimed by the manufacturer is the cable's extremely simple design which reduces the need for jointing and conductor-splicing tools and materials. A sharp knife, rubber cement, rubber splicing compound, friction tape and waterproof paint are all that are necessary to joint or tap the cable.

As the company explains, "Simplex-ANHYDREX Cables are easy to handle, easy to install, and easy to maintain. They are easy to handle because of their flexibility and simple construction. They are easy to install because they can be laid in a ground trench, carried around





TWO UNDERGROUND CABLES, the Simplex-ANHYDREX, above, and the G. E. FLAMENOL below are analyzed for their potential use in the exacting duty of carrying sound to the individual ramp speakers.



ANOTHER POPULAR CABLE is the Whitney Blake TELESEAL which has an unusual construction.

obstructions, or suspended from messenger wires. They are easy to maintain because they are not subject to galvanic action and will not rot, rust, or decay."

The sheath of hard-service neoprene which adapts the cable for service either in ducts or buried directly in the ground, gives the conductor insulation abrasion resistance and eliminates electrolysis, stray currents, and secondary currents. And since the ANHYDREX insulation and the tough neoprene sheath are both impervious to moisture, expensive potheads are said to be unnecessary at the cable terminals. In fact, a simple, waterproof taping job with drip loops is said to suffice.

The name of the cable is molded into the sheath. Other identification marks, letter, or figures can be molded into the sheath so that phases, circuits, etc., can be readily identified. Minimum order for molded marking—3000 feet of any size.

Because of its light weight, long lengths of Simplex-ANHYDREX Underground Cable can be handled in the field by a small installation crew. The cable is available to users in 1000 foot lengths. The approximate net price range is: No. 14, $148.00 per 1000 feet, up to 9999 feet $74.00, and over 10,000 feet $66.60; No. 12, $174.00 per 1000 feet, up to 9999 feet $87.00, and over 10,000 feet $78.30.

Whitney Blake TELESEAL

TELESEAL underground communication wire, suitable for drive-in theatres and recommended by many equipment men, is manufactured by The Whitney Blake Company. This wire has a conductor of hard copper with an electrolytic lead plating for corrosion resistance and over this a brass plate for enduring adhesion. Around the conductor is a submarine-cable type low moisture absorbing insulation said to have low transmission loss and stability for operation under water for long periods; and over this a tire-tread type neoprene jacket. The neoprene is highly resistant to oil, acid, moisture, abrasion and light.

The No. 14 wire is made with a nominal insulation wall thickness of 0.052 inch. Insulation is adherent to the conductor. The nominal wall thickness of the neoprene jacket on this two wire size is 0.035 inch. And No. 12 is in proportion. Nominal outside diameter of the No. 14 wire is 0.238 inch.

Whitney Blake TELESEAL, which is recommended for dependable, trouble-free communication service, is available in the popular two conductor sizes: No. 12 and No. 14 AWG hard copper. Both sizes are available as twisted pair constructor, or single. When twisted, the conductor lay is 5 inches nominally. One conductor bears raised tracers for identification.

A substantial increase in telephone talking transmission is claimed for the product. Wet and dry weather transmission equivalents are practically identical. By way of comparison, the transmission loss of the average weatherproof drop wire can be more than 50 per cent greater in wet weather than in dry.

The Whitney Blake Company suggests that underground splices be avoided whenever possible on any insulated cable. This can be accomplished by looping the wire out of the ground at each speaker post. Where wire is connected to the feeder, a junction box is installed for making the connection and also for service purposes.

No. 14 TELESEAL wire is put up in 750 foot coils and No. 12 in 500 foot coils. If desired, No. 14 can be furnished on 2500 foot non-returnable reels and No. 12 on 2000 foot non-returnable reels, both at a slight additional cost.

List price of the two-conductor No. 14 was—in 1948—$58.30 per thousand feet; and of the two-conductor No. 12, $82.31, with both prices subject to a maximum discount of 30% when the distributor purchases 250,000 or more feet. Other discounts are in effect, depending on linear footage purchased. Normal method of selling is to distributors and national supply houses who can buy in sufficient quantities to obtain the maximum discount. These distributors or supply houses in turn sell to the theatre owner.

Many theatres have already installed TELESEAL underground cables and the field reaction is said to have been most favorable. Inasmuch as the speaker is carrying voice frequency current and is not exposed to extremely high voltage, the TELESEAL type of wire, developed originally for the telephone and railway industry, is claimed to be ideally adapted to drive-in theatre usage.

Conclusion

There are other types and brands of underground cables available to drive-in theatre construction; but these are three which are in common use. As a buried investment, the value of which is in the service it performs, great care should be utilized in the selection of a good underground cable and its installation should be completely in conformity with the manufacturer's recommendations.

WHY SPEAKERS AND CABLE MUST BE WEATHERPROOF



The accompanying picture might well illustrate bad management on the part of some drive-in owner in the more frigid areas around the Great Lakes or New England during the bitter cold months when speakers should be weather protected or stored away. But it doesn't!

Actually, this shot was taken by a representative of THEATRE CATALOG at Hall's Drive-in, Gainesville, Georgia, and rushed in at press time.

It would seem that even the sunny south is not immune from unkindly elements, for this is the condition as it existed on January 31, 1949.

To take weather like this, speakers and cable must be tough. And while it may be a little unusual to have weather like this in Georgia, where drive-ins are able to operate the year around, it could happen anywhere.

Topographical Surveys and Test Borings

These First Steps in Careful Planning Can Save Thousands of Dollars and Future Drive-In Headaches

As the crow flies, it is a long way from Danville, Virginia, to Chicago, Illinois. But experienced engineers found a way to annihilate distance. Here is an account of the complete planning of a drive-in theatre, away from the actual site, the secret of the enterprise being essentially the competent utilization of a thorough topographical survey.

To a casual observer, the erection of a new drive-in theatre near Danville, Virginia, in the latter half of 1948 presented no radical departures in architectural procedure, no visible innovations to excite more than normal comment. What Danville sidewalk superintendents saw was the omnipresent bulldozer in its routine of pushing earth around, then an orderly struggle with structural steel as the screen tower was put up, with its characteristic silhouette against the sky. Other buildings were erected, ramps constructed, speaker stands placed—the usual program of building proceeded on schedule, and the working crew went through their usual paces.

However, despite the appearance of convention, this was a unique construction job and perhaps symbolic of an advanced trend in drive-in theatre building. Designed by remote control, so to speak, the Danville drive-in was the brain-child of Motiograph engineers far from the actual location, working only with a topographical survey of the proposed site. In the formative stages, not even a photograph of the actual site was consulted, nor in fact did one exist. Credit for the outstanding success of this job can be attributed to a well seasoned mixture of theory, practical knowledge and skillful application, the seasoning consisting of a generous dash of experience.

Once the decision was made to build, proper selection of the site became not only the first subsequent act but also the most important. In this choice, Motiograph guided the owner by a well-defined set of rules which were applied to the Danville location with happy results. Here the dictates of experience helped them avoid disastrous geographical blunders. In their words: "We believe that many of the problems presented to the design engineer could be eliminated in many cases by the more careful selection of the site. We believe that close attention to the following rules for the selection of a Drive-In Theatre should be paid before the site is finally selected:

1. It must be within easy driving distance of a population center. There should be at least 50,000 people within this distance of the Drive-In Theatre site.
2. The lot itself should be adjacent to, but not necessarily on, a well-travelled main highway.
3. To be a practical money-making enterprise, the Drive-In Theatre should have a capacity of at least 500 cars. To obtain the best layout for the theatre area proper, for a 500 car Drive-In Theatre, the lot should be at least 500 feet wide and 600 feet deep. Roughly, each 100 car increase in capacity will require 100 feet in



THIS BIRD'S-EYE VIEW of the Crescent Drive-In, Danville, Va., gives some indication of the engenuity employed by the engineers, who, in Chicago, without ever having seen this site, prepared the complete plans for this theatre.

additional width and 50 feet in additional depth. Thus, it will be observed that the site selected should be as nearly square as possible. Drive-In Theatres, however, have been successfully built on irregular shaped tracts of land and a prospective irregularly shaped site should not be discarded until a scale layout has been made.

4. Heavy drainage, grading and ramp construction costs make a plot of land with widely varied elevations most undesirable. Gentle slopes are generally desirable, since they facilitate drainage.
5. Easy access to three-phase electric power is important and if city water and sewer connections are adjacent to the lot, the cost of wells and cesspools can be avoided.
6. Before the lot is purchased, by all means check with local zoning boards and traffic control authorities to make certain that a Drive-In will be permitted on the site selected."

Essentially, each drive-in site is a law unto itself and in its requirements differs from every other site. Consequently, there is no such animal as a stock plan which will cover all past, present and future drive-in theatres. In addition, experienced engineers know that most of the chief difficulties existing in drive-in construction were the unhappy by-products of incorrect design of the viewing area.

The ills that plague drive-ins are legion. In a number of localities, poor drainage layout makes parking virtually impossible after every heavy rain because of residual water or viscous mud. Even more serious are the impediments to clear vision. In many open-air theatres, the screen is either too small or too large for the ground area it serves. In some others, it is impossible for all rear-seat customers to get a full view of the projected picture. Patrons unfortunate enough to be parked at the end of ramps in some locations see a pronounced "keystone effect" when viewing the picture because the designer, whose zeal for cash customers temporarily submerged his better judgment, planned the theatre with too great an angle from the center line. While this grotesque optical illusion may enhance a program of slapstick comedy, it is almost certain to discourage the return of those conventional patrons who insist upon projection of the very finest quality.

Poor design can be costly. Many owners of drive-in theatres have found that their drainage and construction costs were greatly in excess of the original estimates because the theatre area was not laid out in proper relationship to the topography of the site. There are also a large number of drive-ins that cause heavy traffic tie-ups because the operator failed to provide for proper entrance and exit drives and adequate parking or holding areas. This lack of foresight will not endear the operator to the state highway department and it is easily possible that he might be forced to do some fancy and expensive revamping of his heavy traffic areas if the highway guardians think it necessary for safety.

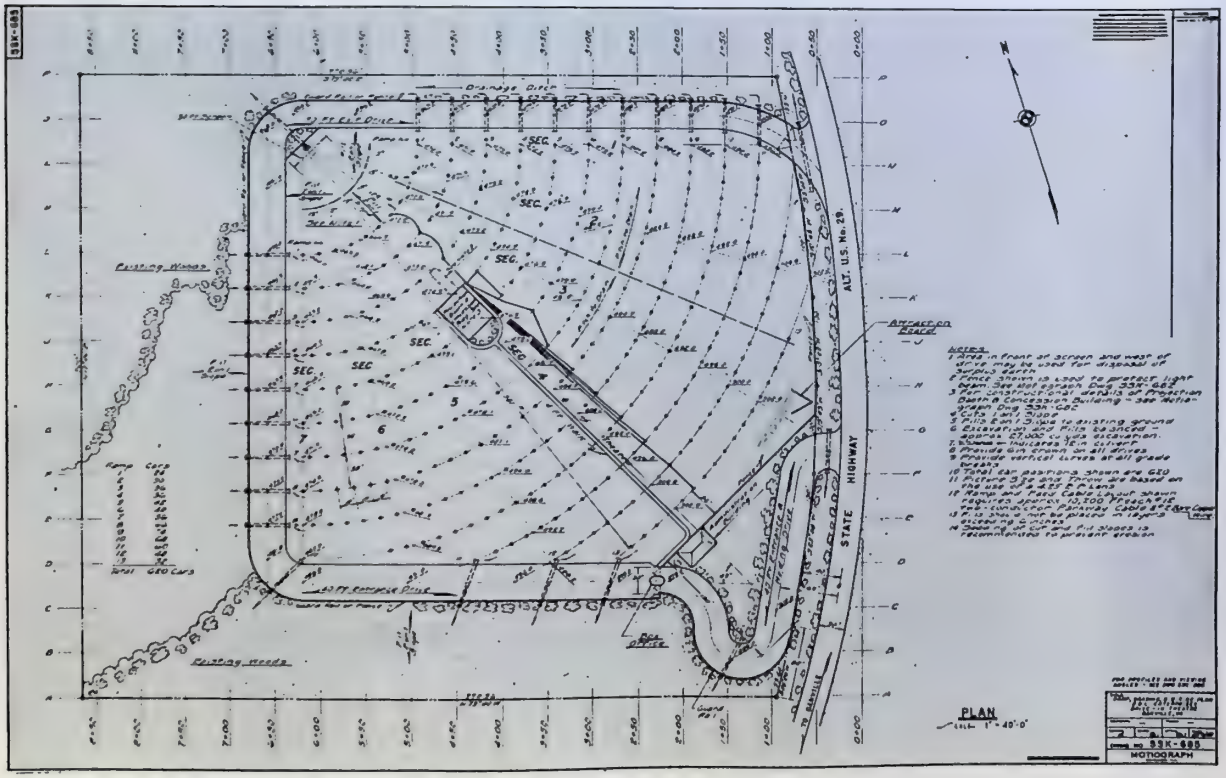
If these and other mistakes are to be avoided—and they can be, as the Danville theatre proves—the owner must be conversant with the fundamental requirements of his chosen location. In this respect as in others, the history of the Danville drive-in is a beautiful illustration of intelligent planning in action.

Getting off to a flying start, the owner employed a local surveyor to make a thorough topographical survey of the entire area, showing roads and existing grades, types of soil, unusual obstructions and other information pertinent to the design of the theatre, particularly with respect to drainage problems. At the same time, ground borings were made to determine the proper depth for screen tower foundations since it was necessary to give the tower sufficient stability to withstand the average wind velocity around Danville.

The completed topographical survey was delivered to Motiograph who then made a layout of a theatre of the desired size. This layout gave all the necessary information on drainage, grading and ramp construction, location of the screen tower, projection building, ticket booth, concession stand, parking area, roads, in-car speakers, junction boxes, wiring, and the many other items which enter into drive-in theatre construction.

Standard procedure before construction is started is to check the layout carefully with state, county, or city traffic authorities since they may insist on specifying the location and dimen-

BELOW is the ramp, grading, and wiring plan drawn for the Crescent in Danville, Va. Scale is 1 inch to forty feet and most of the necessary rules which the engineers considered conducive to successful drive-in operation are here indicated. Car accommodations number 620.



sions of entrance and exit drives and of parking areas to accelerate incoming or to slow outgoing traffic. The drainage system to be put in will also usually require the approval of the city or county engineers so that any change in the grade of the theatre area will not cause a serious drainage problem on adjoining property areas or highways. The engineers completed these pre-construction details and the approval of the proper authorities was secured before the Danville job graduated from the drawing board stage. After the theatre layout was approved, the owner then secured plans for the screen tower, the projection building and the concession stand governed by the type of construction he desired and the approximate extent of investment he felt justified in making.

The first steps in the actual construction of the Danville theatre were to put in the approved drainage system, then to carry out the grading of the entrance and the exit drives and of the ramps themselves. Top soil removed from the theatre area proper during these initial operations was set aside for later utilization in landscape gardening. Necessary wells, cesspools, electrical lines, water, sewer, and other utility lines, and the electrical lines to the junction boxes of the in-car speaker system were arranged for, and installed before the lot was paved.

As for subsequent construction, Motiograph offers these general rules: "It does not particularly matter which building is constructed first—screen tower, projection building, or concession stand —though often the projection building is finished first since many of the electrical connections and utility lines terminate in the projection building. It is then desirable to arrange for the completion of such projects as ticket booth construction, fencing and landscaping, painting of buildings, fences and paving. Installation of projection room equipment and in-car speakers should be completed well in advance of the intended opening date so that complete tests and adjustments can be made."

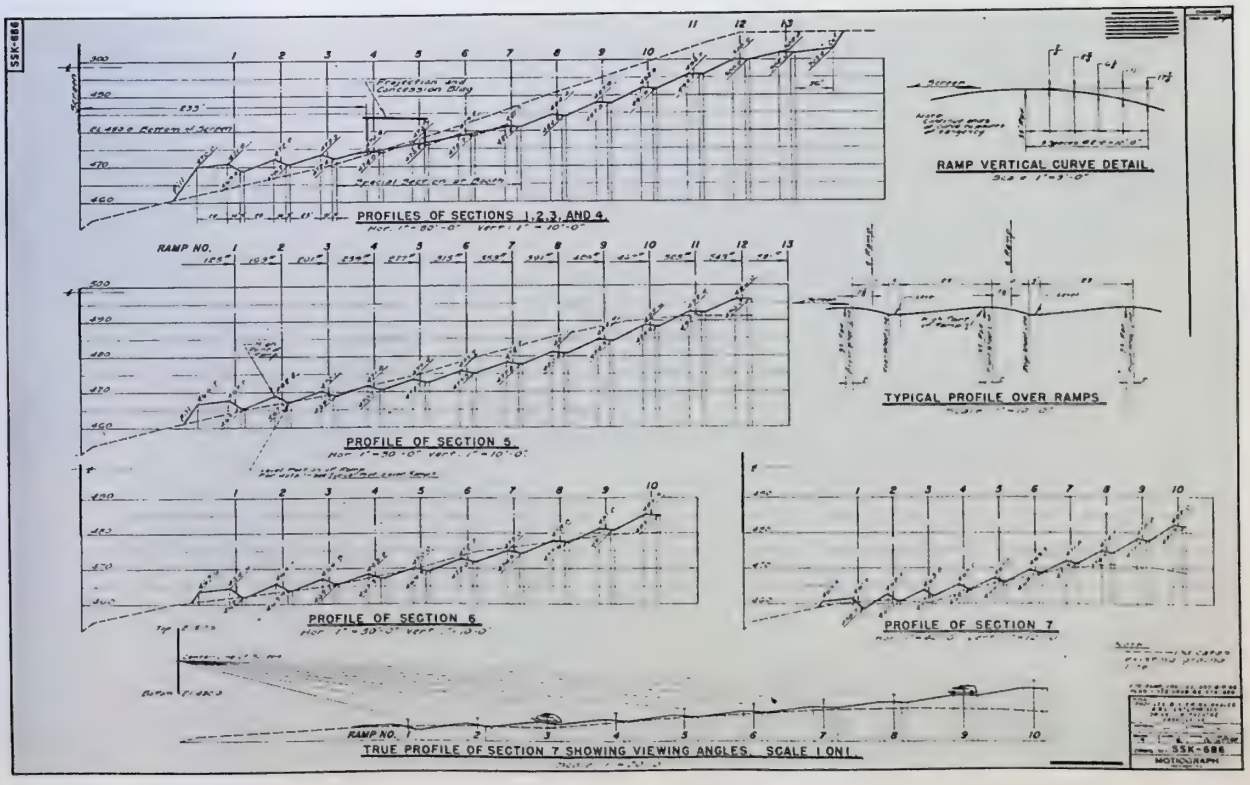
In the Danville drive-in theatre, the screen tower was erected at the corner of the site farthest from the road. In most drive-in theatres the designer and the owner prefer to have the screen tower located adjacent to the road because this arrangement makes the back of the screen tower available for advertising purposes and this is an opportunity not to be lightly declined. However, in the Danville drive-in, the location of the screen tower places it at a point where the land is much lower than the land adjacent to the road. If the screen tower had been placed in the opposite corner, the amount of cut and fill required would virtually have doubled the actual cost of grading.

The economy that this planning made possible can be more readily appreciated when the arithmetic of this particular instance is given. Basing the estimate on the usual cost of about 40 cents per yard for moving earth, it is calculated that a saving of approximately $11,000 resulted from the unorthodox placing of the screen tower, a tidy sum and a very convincing illustration of the advantages of thoughtful planning.

In order to hold grading costs to an absolute minimum, the theatre layout stipulated maximum grades. Generally it is desirable that the grade drop no more than 2½ feet over a linear distance of 100 feet. However, the grading in the Danville amphitheatre has for the most part violated this general rule, not as an excursion into futuristic architecture but merely as another economical step. If the design had specified the more conventional and frequently more desirable 2½ feet drop per hundred linear feet, the entire grading cost would have been much greater than it actually was.

Because of the peculiar topography of the site, it was found necessary to install many more heavy drain tiles and in a greater number of locations than are required in an ordinary site. However, in most situations this extra tiling would be eliminated, another valid reason for spending some time and money on a thorough study of the ground before the building actually starts. To discover an abnormal drainage condition before paving is planned and carried out means a tremendous saving in time, money and materials later on.

In the construction of the Danville drive-in theatre, maximum clarity of vision for the patrons was a prime consideration. The viewing area was laid



PROFILES and viewing angles for the Crescent Drive-In may be seen below in the final drawing. This theatre was built with 13 ramps and the plan shows how each ramp was graded to provide the best possible viewing angle for all cars. Dash lines indicate what were the existing levels.

out to foster clear vision and, as a result, the occupant of each car secures a view of the entire screen regardless of the position of the automobile in the theatre. And by dividing the theatre into two 40 degree sectors from the center line of the theatre, engineers have eliminated almost entirely the corner parking spaces with their acute viewing angles.

Special attention was also devoted to determining what screen size would provide the best picture reproduction. In the first place, picture size and throw were based upon what is believed to be the most effective focal length projection "eye" for outdoor theatres—the 4.25 E. F. Lens. Another factor determining ultimate screen size was the mechanical efficiency of the projection light—the Suprex type High Intensity Arc Lamp. The third determinant in the quest for optimum vision was the undeviating size of the drive-in area itself.

On the basis of these three factors and especially their close interdependence, the engineering staff finally arrived at the conclusion that a picture 50 feet in width would best serve the visual needs of Danville audiences. Any larger size screen would merely have produced a picture of relatively poor illumination in which good definition was also lacking. On the other hand, any smaller screen would have given the occupants of the rear ramps an uneasy feeling of seeing the show through the wrong end of a telescope since the last ramp, for example, is about 570 feet from the screen, measuring along the center line.

Sometimes even a perfect optical system is nullified by the distraction of headlights from cars traveling on the adjacent highway. At the Danville location this possibility was recognized as a potential threat to satisfactory show enjoyment and was easily but entirely eliminated by the placement of fencing to prevent the light from either passing or incoming automobiles from shining on the screen or into the parked customers' cars.

Customer satisfaction plays a very important role in all facets of the design. For example, the walk-way from the rear of the theatre area to the projection and concession building is a special feature not included in a number of drive-in theatre designs. Patrons en route to stoke the inner man or woman will really appreciate this thoughtfulness, especially in sloppy weather.

The traffic problem has been recognized and competently solved. A curved entrance way 40 feet in width and about 250 feet in length permits the parking of a great number of automobiles. Thus patrons of the drive-in can turn into the theatre entrance without waiting and the flow of traffic on the highway is not disturbed. To minimize interference to highway traffic from outgoing cars, the exit drive was made narrower than the entrance way and the difference in entrance and exit widths automatically controls the introduction of relatively slow-moving automobiles into the fast-paced traffic already in motion on the main road.

In general, the procedure recommended by Motiograph and followed in most part by the Danville operator is so logical as to seem obvious at first glance. Except for the above average slope in the ground of the viewing area, the design conformed to the physical requirements of the location revealed in the thorough topographical survey, and many problems that might have arisen from oversight were automatically solved on the drawing boards of the engineers.

However, hit-and-miss building is not yet a thing of the past and this is especially true in the specialized field of drive-in theatre design. Here, the frequency of incorrect planning leads to one conclusion—that in a great many instances rule of thumb is the guiding principle; and unfortunately the rule rather than the exception. Already existing errors will be more or less costly to rectify, depending on the extent of the damage and the urgency of repairs. Future drive-ins, on the other hand, can avoid trouble almost entirely by the relatively simple procedures of following the rules that experiences have taught. Blind planning, unfortunately, does not have two eyes.

ANALYZING DRIVE-IN COSTS:

The prospective operator will discover that financially the drive-in is quite a plunge, except for the theatrical big shot. Merely to rig a 500-car drive-in (the minimum recommended size), he will have to scratch up the following fees, all of them estimates:

Drainage system, $2,500; grading and ramp construction, $8,000; water and sewer systems, $3,000; projection building, with plumbing, $4,500; concession stand and equipment, $3,500; paving, including parking area, $10,000; electrical wiring and fixtures, $3,000; screen building, $12,000; posts for junction boxes, $1,000; lights for junction box supports, $2,500; projection, sound equipment, and speakers, $19,500; ticket office and equipment, $1,250; fencing, $3,000; landscaping, $1,750; advertising signs, $1,000; miscellaneous labor, $2,500; cost of plans and specifications, $4,000, and legal work, $2,000.

This comes to a grand total of $85,000, as computed for an average undertaking by Motiograph, Inc.

The prospective operator who still is inclined to be bullish about the scheme will be brought next to the rude realization that managerial expenses are high. A few of these hoodoos are big staff, incessant housekeeping, fickle patronage, and even more fickle weather, picture prices, clearance disputes, and an occasional round with the burghers over highway safety.

If, however, he successfully circumvents these several short cuts to disaster, everybody and their kids the country 'round will be glad to know him.

Planning the Drive-In Theatre

Considerations of Function and Equipment That Make Careful Engineering and Supervision Important

By S. Herbert Taylor,
Chief Engineer
Engineering Dept., Park-In Theatres Co., Camden, N. J.

As chief engineer for the company which originally conceived the idea of an open air drive-in theatre many years ago and holds several basic ramp patents, Mr. Taylor has actively participated in the planning of more than 300 of these theatres, so his views have considerable merit. Numerous of his references to specific structures or areas have been developed in greater detail in this current and in past editions of THEATRE CATALOG. This is a coordinating survey, however, that may serve to tie in many loose ends for the owner or architect who is debating the entry into the drive-in field.

A Family Theatre

No matter what the Drive-In Theatre started out to be, it has become a family institution and a typical American one. With the advent of high wages, and the family car, the re-establishment of the family unit rather than the "doubling-up with inlaws" of wartime, the passing of servants, and the expense of baby sitters, the American family has taken to the drive-in theatre as the proverbial duck to water. Seventy to eighty per cent of the business of any drive-in is family trade that tosses the children into the car. Even the baby can be taken along—since most well regulated drive-ins will provide free bottle warming service. Playgrounds for the small fry will pay dividends by assuring an early crowd for the first show. Pa and Ma do not have to dress up—they can relax and smoke—and invalid "Aunt Mary", who has not been out of the house for years except for an auto ride, can be driven right into the theatre and enjoy the show.

The exhibitor who loses sight of the family nature of his trade will miss fire. His pictures must, of course, be of high calibre. He must admit children under a certain age free. His programs must be attractive to and fit for older children. His place of business must be well policed and regulated.

Much of Audience New

Indoor exhibitors who have gone into the drive-in field have discovered that much of their audience was new, and therefore the new vehicle did not compete too seriously with the indoor shows. Children did not keep parents out of their automobiles, but did keep them from their favorite pastime—the movies. Mr. Hollingshead's ramp patent No. 1,909,537 was the first successful effort to combine those two Americans favorites, the family car and the movies. Through it has been opened to hundreds of thousands of American families entertainment facilities previously denied them. Anyone conversant with type of patronage and the tremendous growth in the field can testify to this.

Concession Business Important

Because of the nature of its clientele a drive-in cannot sell liquor; but the sale of non-alcoholic beverages, sandwiches, hot dogs, ice cream, etc., makes up an impressive percentage of the total income. The practice of handling this business through concessionaires is so universal, that the food and drink stand has come to be commonly called the concession stand. It should be carefully located near the population center of the theatre.

Size of Theatre

The size a drive-in should be is dictated by the surrounding population and the number of drive-ins already existent or potentially existent in the area. W. W. Smith and V. C. Smith, of Park-In Theatres, because of their experience in locating literally hundreds of theatres are eminently qualified to advise in this regard.

In actual area a 500 car theatre will cover approximately six and one-half acres, a 1000 car theatre twelve and one-half acres. This is the actual area of the ramps, the driveways, screen, etc., Squared up, the form in which such a site must usually be purchased, the areas are approximately sixty percent greater. This means that for 500 cars, a total of ten acres must usually be purchased; for 1000 cars, twenty acres. The additional ground provides room for landscaping, playgrounds, other entertainment features, and future development. Some owners prefer even larger tracts, particularly where the increased acreage can be obtained at a much lower cost, as is often the case. This latter will also provide insurance against future encroachment, particularly on the highway side, of some objectionable satellite business.

Selection of Site

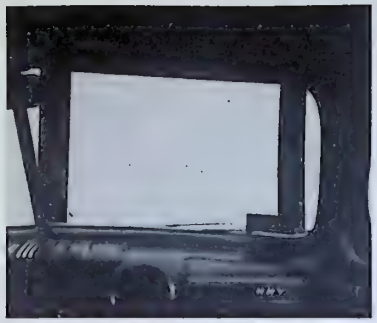
A low, flat piece of land can often be purchased for a small sum but the necessity to obtain drainage may increase grading costs from four to ten times normal. A flat piece of land with adequate drainage, even if the pitch be

(FIG. 1) Patrons in the back seat need only move slightly to the right or left in order to see between or around their friends in front, or such other obstructions as windshield dividing bars and mirrors. Careful engineering of the ramp inclines permits each driver to aim his car.

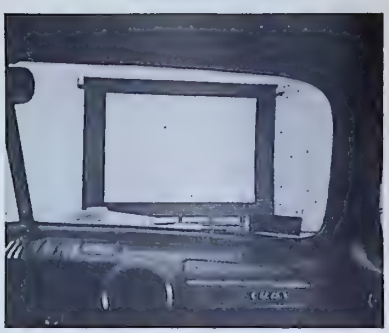




(FIG. 1a.) Rear seat vision from the first ramp of a large theatre. While 143 feet from the screen the patron's vision fails to encompass the screen.



(FIG. 1b.) Rear seat vision from the first ramp of the same large theatre should patron sit on seat edge and lean forward. This just about does it.



(FIG. 1c.) Critical vision lines of a drive-in can best be understood from this series. Note the perfect rear seat vision from the second ramp.

slight, will prove economical from a grading standpoint. This is particularly so if you can cut into the land approximately two feet at the low point and still obtain drainage.

Grading on a sloped site will prove just as economical as on flat, provided the slope is uniform and not too steep. A variety of conditions may exist and still economical grading costs be realized. The ground can slope toward the screen but preferably at not more than four feet in 100. It may slope away from the screen but preferably at not more than three feet in 100. It may slope from one side of the theatre to the other but preferably at not more than five feet in 100.

These are the conditions necessary to the most economical grading. Many very profitable theatres have been constructed on sites not meeting these specifications. Often the ideal topography is not available, or more often still, better located sites will justify a greater grading expense. This may also be true, of course, of land that is cheap because it is low. Grading cost should be added to land cost in appraising the value of any site. There again the wide experience of such men as the Messrs. Smith can be of inestimable help to the builder.

The Grading Problem

The best indoor theatre design provides clear view of the screen from any seat; but most such theatres depend on the ability of the patron to see around an obstruction. Two row spacing and similar seating layouts are only possible because of the freedom of the individual to shift or move.

Visibility is so limited and framed by the windshield of a car, that all sight lines must be kept clear in a drive-in theatre. This means that not only must the occupants of any car be able to see the bottom of the screen over the car ahead, but the car must be so aimed that the entire picture (perhaps 44′ x 60′) can be encompassed within the windshield, usually 12″ to 14″ high. Imagine yourself in the rear seat of an automobile looking through the narrow windshield; or better, get into one, and you see how different this is to indoor visibility conditions. (Fig. 1.)

The front of the car is elevated for the aiming operation by use of a ramp and the driver can control the angle of the car by the distance he drives up the ramp. It is not enough to just throw up a series of ramps. Each ramp must be related to the preceding one so that patrons parked in that ramp can see the entire screen over the cars ahead (see Hollingshead patent). We must go as high with each succeeding ramp as necessary to accomplish this purpose, but no higher or we increase grading costs and complicate drainage.

The calculation of such a system of ramps is not difficult, but it involves the use of the correct factors and painstaking thoroughness. Just one system of ramps will not do, however. We must have a large number of systems calculated and ready, and select the one that best fits the topography (Fig. 2). Here again is where the long and varied experience proves useful. Park-In Theatres through its engineering department, furnishes all of its licensees with location and grading plans tailored to their sites. Careful engineering is used to select just the right system of ramps and their fitting to the ground surface to obtain a minimum of earthwork with adequate drainage.

The least amount of earthwork, therefore, the least amount of earthwork cost is obtained by balancing cuts and fills so that the fills are made by the material obtained from the cuts. Cuts mean that we must cut into the existing ground surface. Drainage must be obtained away from this cut surface. With very flat tracts this is sometimes difficult, particularly if there are no ditches or drainage pipes available.

If drainage cannot be had from the low point of a theatre it may be necessary to grade the theatre by bringing in fill from the outside. The fill method is expensive, unless adequate material is available at a very low price. Such an increased earthwork can be as great as fourfold in case of an entire fill job.

For drainage purposes, side pitch of the theatre should not be less than 0.4 percent and for purposes of comfortable sitting not more than 4.0 percent. The theatre may be drained to both sides or across the theatre from one side to the other, depending upon the topography of the site and the drainage conditions. In one case, it proved economical to drain from both sides to the center. This required a pipe drain with inlets through the center of the theatre. This is unusual.

(FIG. 2.) Twilight view of the same large theatre illustrated above shows the system of ramps of varying heights and the maximum viewing angle consistent with patron vision without distortion. Distance from the screen affecting visibility, and maximum acceptable viewing angle, dictate the theatre size.



The Screen

Screens vary in size from 35 x 45 feet to 53 x 72 feet, and in shape from vertical flat to sloped-concave. The sloped-concave screen (Fig. 3) is a recent invention of Park-In Theatres, upon which application for patent has been made. Three of these screens have been erected in New Jersey and one at Miami, Florida. All were designed by Park-In's Engineering Department, the one at Miami being guaranteed to withstand a wind velocity of 135 mi. per hour.

The advantages of the sloped-concave screen are the reduction of distortion and a better return of light to the theatre, resulting in a brighter picture. The latter is particularly important in drive-in theatres where due to length of throw and amount of screen area, the standard of screen lighting cannot approach that of the indoor theatre.

Distortion is reduced because all points on the screen are much more nearly equidistant from the projector lens than in the conventional screen. This eliminates unnatural elongation at the center of the theatre, and greatly reduces it at the sides.



(FIG. 3.) Future periodic repainting and reconditioning of the screen can be greatly facilitated through the use of a built-in catwalk and monorail from which rope platforms can be dropped by block and tackle or other pulley arrangements.

The screens are so large that they constitute a structural problem of the first magnitude. The top of a large screen is approximately 75 feet off the ground.

We believe the most economical approach requries separating this screen problem from others by keeping all other buildings as separate structures. This also allows their location in the most advantageous places.

Following this plan the screen can become similar to a glorified signboard; but one with sleek and modern lines. We believe in keeping it as simple as possible and merging it with the ground by proper landscape planting. These structures are imposing whether of the vertical, the sloped or the sloped-concave design.



(FIG. 4.) View of same large theatre from the top of the screen tower. Note the 100 foot floodlight tower in the rear and the separate concession stand facing the screen so patrons can look while eating.

Concession—Projection Buildings

The structural problem of the concession and projection buildings is to occupy as little height as possible. Too high a structure spoils parking in too many ramps to the rear of the structure. This dictates that these buildings be built with as thin roofs as consistent with safety, so as to make available as much working height as possible on the inside. The roof elevation should conform to the sightlines of the ramp immediately behind it, and should be carefully engineered.

It was originally the practice to place the projection booth, the concession stand and the rest rooms in one building. First the concession stand was separated (Fig. 4) moving it to one side or in back of the projection booth. More up to date practice places the concession

(FIG. 5.) Landscaping at this northern New Jersey theatre won a "roadside improvement" prize offered by the State Highway Department and the Garden Clubs of the State. Such attention to the desires of neighboring communities is sure to produce healthy results and enthusiastic friends for the owner.



stand and the rest rooms in one structure at the population center of the theatre several ramps in back of the projection booth. The projection booth is located on the fourth, fifth or sixth ramp depending on size of the screen.

The Ticket Booth and Traffic

The ticket booth or booths should be located far enough from the highway to allow storage of from 100 to 200 cars ahead of the booth. This is to prevent backup of cars on the highway with the resultant irritation of local and state traffic authorities. In heavily populated areas it is often necessary, in addition, to provide parking lots of from 200 to 500 car capacity, so that patrons may wait for the change of show when the theatre is filled. This lot should be so located that cars can easily be driven into it from the entrance drive and out of it to the ticket booth. It should also have an "escape" drive so that a patron can leave should he tire of waiting. This is the reverse of indoor practice where the wait comes after the purchase of a ticket;—but is considered good business in drive-ins.

Electrical Installation

No mention has been made of the electrical installation, but it is a large one. The projectors and projector lamps must be the largest and most powerful manufactured and the equipment in the concession booth also draws a heavy load. Driveways and walkways must be illuminated and the ramps must be identified by lighted numbers. In-car speakers must be connected by a cable sunk in the ground. A number of eastern theatres are lighted from a 100 foot pole, located at the rear and equipped with a battery of vari-colored floods. These bathe the whole theatre in a soft glow while the pictures are being shown; soft enough to prevent interference, but bright enough to allow safe walking. Between pictures, the floods are brought up much brighter.

Landscaping is essential. The theatres are very bleak and bare without it. Landscaped areas are suggested on every Park-In plan (Fig. 5). The actual selection of materials is left to the local owners. Local, native materials are inexpensive and have the advantage of producing luxuriance, the secret of all good landscapes.

Chief Problems Engineering Ones

It is seen from the above that most of the problems in actually constructing a drive-in theatre are engineering ones. One of the most critical of these is the grading problem, where proper design can mean the difference between a modest cost and a staggering one. To illustrate this, just one inch error in elevation over the area of a seven or eight hundred car theatre, throws estimated earthwork out 1,000 cubic yards. This is because of the tremendous size of the theatre.

The "sight" problem, that of providing adequate visibility, is a most important engineering one; as are also the design of screen, projection and concession booths, electrical lay-out, entrance and exit drives, parking areas, etc. The entrance, exit and parking facilities call for a high degree of traffic engineering.

A WORLD FAMOUS CARTOONIST SPOOFS THE DRIVE-IN



"Two in the Balcony, please!"

DRAWN by the inimitable ANGELO and reproduced through the courtesy of the Chicago Sun-Times Syndicate, this cartoon was featured in many daily papers such as The Philadelphia Inquirer, and others of similar prominence. It is indicative of the public attention that drive-ins have acquired through the years.

Man Made Moonlight for Drive-ins

Area Lighting Without Distraction Adds Safety, Traffic Control, and Stimulates Confection Vending

Early in 1946, with the introduction of the roll-over ramp and in-car speakers, the old problem of area lighting in the theatre was again revived. There were three reasons for this area lighting:

(1) To save time and avoid confusion in parking the cars and, indirectly, to offset patrons' aversion to entering a darkened theatre;

(2) To protect patrons going to and from the concession booths, and

(3) To enable the ushers to see by silhouette through the car windows.

At that time, W. W. Smith, president, Park-In Theatres, Inc., and S. Herbert Taylor, the company's civil engineer, conferred with the corporation's electrical engineer and contractor, the firm of Joseph J. Tomasulo and Company, on this problem, and the General Electric Company was asked to participate. This group entered on a series of experiments.

The Problem

After considerable study, it was agreed that, if full moonlight was present every night, the problem would be solved. Full moonlight is 1/40th of a foot-candle. In reality, however, some nights are darker than others, sometimes mist or haze is present, and there are nights when it rains. In other words, the theatre is subjected to all the weather variables, including ideal night conditions.

As in the normal roofed theatre, lighting of some nature is needed in the open air drive-in because patrons arrive and leave at various times and for various reasons. The need is even greater in the drive-in theatre, because a motor driven vehicle is involved, that cannot step on toes or bump into objects without causing serious damage. It was noticed that a bright moonlight night provided the most effective lighting. So a permanent full moon of mixed color floodlights mounted high on a towering steel pole was the logical answer.

The problem resolved itself into how to produce moonlight lighting. It was agreed that the light source would have to have a high mounting, so that projected light would be as near a vertical plane as possible. Also, the problem of re-lamping the fixture had to be considered. General Electric engineers recommended the installation of a 100-foot pole, equipped with wide-beam floodlights, in the rear center of the last ramp of the theatre to produce a low level of incandescent light.

The end of the 1946 season introduced another problem: What to do with the cars parked along the highway, waiting for space to be vacated in the theatre, so they could enter. Additional land in the rear of the theatre was purchased for a reserve parking area.

First Tests

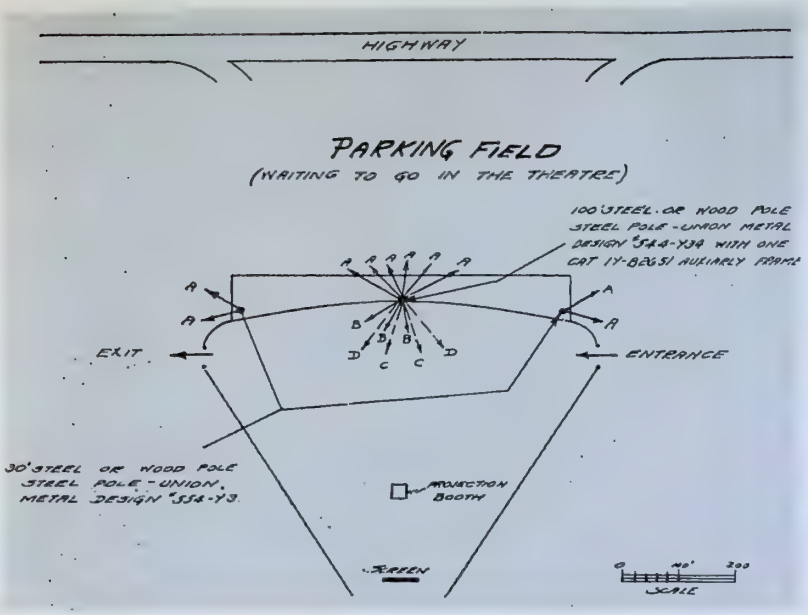
Early in 1947, the owners of the experimental theatre, the Drive-In, Union, N. J., decided to install the 100-foot pole to carry on the experiments of moonlight lighting, to illuminate the reserve parking area, and to support some form of an advertising device to be installed at the top of the pole.

Briefly, the dimensions of this experimental theatre are as follows: Width at the screen, 200 feet; distance from screen to the pole, 500 feet; width of theatre at last ramp, 700 feet; depth of parking field, 500 feet, and approximate capacity of theatre, 700 cars.

The light tower is used to flood the entire theatre during the show with a soft light of a little more brilliance than full moonlight, and has proved most satisfactory. It has been aimed so that the light in no way affects the picture on the screen.

MOONLIGHT FLOODLIGHTING of the parking area of a modern drive-in theatre, as herein described, can be arranged so that there will be no harmful effect on the quality of the screen picture. Such illumination as shown here increases the safety factors as well as facilitating the various services to the cars and the patrons' treks to and from the services commonly and conveniently housed in the projection building or elsewhere.





FLOODLIGHTING PLAN for the model Drive-in Theatre, Union, New Jersey, shows the schedule of floodlights as follows: (A) For the parking, entrance and exit areas, ten G. E. Type L-43 floods, now superseded by Type L-83, with plain clear door glass and 1000 watt general lighting lamps; (B) For the intermission lighting, three floods, same as above; (C) For the moonlight area, two floods, same as above, except for socket arranged for 500 watt daylight lamp and complete with plain green door glass, and (D) Two floods same as above, except with plain amber door glass and with 300 watt general lighting lamps. This schedule has resulted in a satisfactory degree of lighting that contributes much toward safety.

It may be difficult from the enclosed pictures for one to see the benefits from the light tower. This tower has two main objectives. It gives sufficient light for the patrons to see their way around the theatre when they first enter, and there have been many people who have been afraid to drive into a drive-in theatre because of the darkness. Furthermore, it encourages the family type of patron.

This is the first tower of its kind ever to be erected at a drive-in, and was worked out with the General Electric Company.

After installation, the first trial proved that light in any intensity could not be used, since it interfered with the patrons' enjoyment of the pictures. Then came a series of experiments with red, blue, green, and amber doors on the floodlights, and with lamps of various wattages and types.

In one of the experimental arrangements (See photographs—Ed.) it will be noticed that there are four floodlights which shine down on the theatre proper. The lights on the extremities of this bar, the two outside lights, have amber lenses with 300-watt GE lamps. The two center lights have green lenses with 500-watt daylight bulbs. The six floodlights on the opposite side of the pole are used merely for lighting of a parking or storage area behind the theatre, and have no connection with the theatre lighting itself.

The materials which were required for this installation are as follows: one 100-foot floodlight pole; four 20x45 socket adaptors; two green lenses; two amber lenses; four floodlights (Type L-43), without lenses; two 500-watt daylight lamps (for green lenses), and two 300-watt general service clear lamps (for amber lenses).

THE "STANDEE AREA" can be effectively flooded with white light at the same time the man-made moonlight illumines the auditorium area. The 100-foot pole, left background, though apparently quite a distance away, gives a sufficient degree of illumination for this waiting area so that cars can safely be operated without lights. Fixtures for both types of illumination are mounted on the same pole.



Latest Ideas

The final arrangement is shown in the diagram. The four sets of lights are described below. (It should be noted that the reflector has an etched finish, selected because of the wider beam of light that is thrown.)

The "A" floodlights use 1,000-watt general service lamps, and light the reserve parking area and the adjoining roadway. These floodlights are lighted throughout the evening, and are aimed so that no stray light enters the theatre.

The "B" floodlights are the same as the "A" floodlights, but they are lighted only during intermission and at the end of the evening's show. They flood the theatre with white light for rapid movement of cars.

The moonlight floodlights "C" and "D" are turned on during twilight, and remain lighted until the end of the evening's show.

The "C" floodlights are equipped with doors made of green glass and 500-watt daylight general service lamps. These floodlights are aimed to light the center of the theatre, from the projection building to the base of the pole.

An attempt was made to light the sides of the theatre with this "C" type floodlight, but as the beam of the light is extremely wide, the light could not be projected to the sides of the theatre. So the "D" floodlights were decided upon. These are equipped with doors of amber glass and 300-watt general service lamps. The light is gold in color.

There is no problem of area lighting in the ramps between the projection building and the screen. These ramps are normally filled during twilight and the next movement occurs during intermission.

Red neon tubing is installed at the top of the pole to attract attention to the theatre. This tubing can be seen for quite a distance from the theatre.

The L-83 Floodlight

Type L-83, which supersedes Type L-43, is a lightweight general-purpose floodlight having a hinged door for long life and easy servicing. Designed for higher efficiency through the addition of an auxiliary reflector of Alzak finished aluminum, the lamp is available with either narrow beam polished or wide

beam etched reflectors. Three mountings, including a portable base, will meet all common requirements.

In more detail, the Type L-83 includes (1) die-cast aluminum socket housing, with aluminum paint finish; (2) heavy-duty porcelain-shell mogul socket, including lamp grip, for keeping the lamp in fixed focus; (3) combination water-resisting and cable-snubbing gland; (4) four-foot cable (2 conductor, No. 12) for convenient wiring; (5) strong galvanized steel trunnion bracket, providing for rotation through 240 degrees vertical and 360 degrees horizontal (both vertical and horizontal trunnions are equipped with repositioning stops of die-cast aluminum, fitting over the degree scale and locking into position with a set screw, all of which facilitates resetting if the floodlight is rotated for servicing).

(6) locking handle, permitting one side clamping, and eliminating the necessity for using wrenches in making adjustments; (7) degree scales and repositioning stops; (8) asbestos-treated gasket for heatproof, water-tight joint; (9) quick-acting, self-locking lugs, insuring firm seating of door against reflector; (10) high-efficiency, long-life reflector of Alzak-finished aluminum, polished for narrow beam or etched for wide beam; (11) heat-and-weather-resisting molded glass lenses; (12) single extruded gasket, completely surrounding the door glass edge, insuring waterproof seal; (13) hinged door swinging down for easy servicing, and (14) flat base, fitting directly on standard mounting, pipe clamp, slip fitter, or portable base.

The Monotube Pole

Combining adequate strength, good appearance, and long life, the Union Metal Manufacturing Company's metal Monotube floodlighting pole is designed, engineered, and built by a company specializing in producing steel poles for all types of services for 40 years.

The Monotube floodlighting pole is made of high-grade, open-hearth steel, the exclusive cold-rolling process used in fabricating the pole, raising the yield point and ultimate strength of the original metal.

In fabricating the pole, a sheet of SAE-1010 steel is first cut on a taper to accurate size. It is then formed into a tube, and electrically arc-welded with one continuous longitudinal seam. This tube is then placed on a tapered mandrel and cold-rolled under tremendous hydraulic pressure to the desired cross section, and with assured uniform metal thickness throughout. The pole tapers uniformly from top to bottom, with the greatest diameter at the bottom, providing maximum strength with minimum weight of material.

In standardizing on four normal heights, 40, 60, 80, and 100 feet, the Union Metal Manufacturing Company adequately meets the lighting requirements for all major outdoor events. More important, this standardization helps to effect a favorable reduction in the cost of production, permits stocks to be carried, and makes prompt shipments of poles possible. These advantages would be lost if the poles had to be tailor-made for each installation.

The 100-foot pole, the one with which drive-in theatres will be primarily concerned, is made of three telescoping sections. The bottom section is 23 feet, six inches long, and 18 inches in diameter at the bottom, tapering to slightly over 15 inches. The first joint is 24 inches long. The middle section, 40 feet long, tapers from slightly over 16 inches down to practically 11 inches. The top section is 40 feet long, with an 18-inch joint, and tapers from 11.66 inches to 6.06 inches in diameter. When put together in the field, a pole is made that is 100 feet long, with a bottom diameter of nominally 18 inches and a top diameter of nominally six inches.

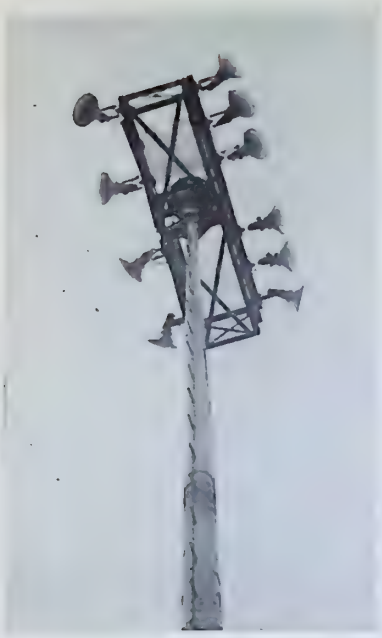
The poles are designed for underground wiring service, and to withstand a 100-mile-an-hour wind when mounting the maximum number of floodlights in the head arrangement selected.

The 40-and-60-foot poles are shipped in one piece, the 80-foot pole in two pieces, and the 100-foot pole in three pieces, as earlier described. The several sections for each size pole are carefully shop-fitted before shipment, and properly marked for field identification. The taper assures a tight field joint when the sections are forced together. No welding is necessary.

Projecting this standardization idea still further, engineers have devised a combination safety-service platform and mounting frame which is simplicity itself. The safety platform, which also serves as the mounting frame for the floodlights, is designed with extra brac-

THE AURA OF THE MAN MADE MOONLIGHT is easily discernible in the photograph below. Lights at the top of the 100-foot tower generate sufficient candle power to permit the safe operation of automobiles with headlights turned off as well as allowing patrons to walk about freely without fear of stumbling, and do not affect in any way the brilliancy of the picture on the screen. Note the normal lighting from the concession enclosure.





FLOODLIGHTS affixed atop a Monotube pole—one of the arrangements used in an early stage of this idea of flooding man-made moonlight over the area. Servicing possibilities can be noted.

ing members, which adds both to its strength and safety. The flooring of the platform is made of heavy expanded metal grating to provide sure footing.

The platform and mounting frame are welded together, and shipped as one complete unit, eliminating the necessity for any parts assembly on the job. The companion half of the mounting clamp for the safety platform is welded to the pole. Thus it is only necessary to bolt the two parts together. This arrangement offers a practical and safe means for servicing equipment at high mounting heights with ordinary labor.

One of the advantages of the Union Metal Monotube floodlighting pole is its adaptability to complete assembly on the ground prior to erection. Here is a new departure from the old method of erecting the bare pole first, and eliminates entirely the hazard of men working high in the air to assemble the various parts.

The poles can be completely wired, and the lights mounted and properly positioned on the ground before erection. The erecting crane lifts the pole into place on the anchor bolts embedded in the foundation. These heavy two and one half inch steel anchor rods are supplied with adjusting nuts for plumbing the pole after it is placed on the foundation. No guying of any kind is required.

Special attention has been paid to wiring convenience and easy access to all lights. The lights can be easily cleaned and serviced from the safety platform, and this work can be done by unskilled labor. Servicing and cleaning of lights is probably necessary only once a year.

Poles are furnished with supports for mounting transformers and distribution boxes as well as primary fused cutouts.

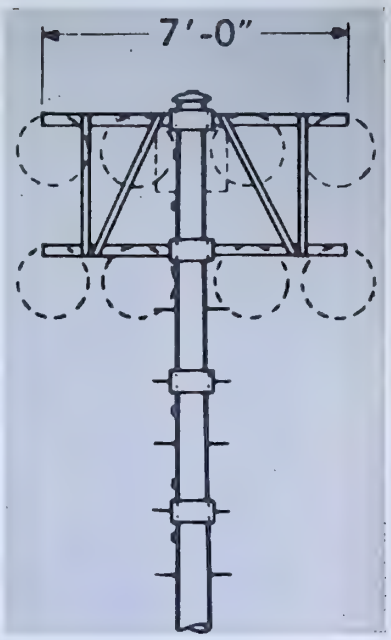
Pole steps commence approximately 12 feet from the ground line, and double steps are installed at necessary locations.

Hand holes and wiring outlets are provided at strategic locations to facilitate wiring. A cable support is welded into the top of the pole.

Because of varying soil conditions, it is impossible to determine the exact size and shape of the foundation. The company has, however, prepared suggestions for adequate foundations which can be used as a guide by one's local contractor, following the determination of the local soil conditions.

Table of critical data for the 100-foot Monotube floodlighting pole as described in the accompanying article. (Union Metal Manufacturing Company, Catalog No. 76.)

Bottom diameter	18 inches
Top diameter	6 inches
Thickness of wall at bottom of pole	0.359 inch
Strength at bottom of pole	515,000 foot-pounds



THE MOUNTING ARRANGEMENT basic to the present use is shown here, as one of the five standard arrangements presented in the Union Metal Manufacturing Company's catalog.

Size of base square	26.5 inches
Base Height	3.5 inches
Diameter of bolt circle	25.5 inches
Projection of anchor bolt	7 inches
Diameter and length of anchor bolt	2.5 x 120 inches

(For the data and discussion presented above, grateful thanks for cooperation are extended to V. C. Smith and Park-In Theatres, Inc., who have sparked much of the experimentation and research which has developed the modern drive-in; George Witting and the General Electric Company, and Harvey S. Tonks and the Union Metal Manufacturing Company.—Ed.)

BY NIGHT, the combination of amber and green doors in the lamp fixtures provides a degree of illumination akin to moderate bright moonlight. Its intensity makes for easy visibility without affecting the quality of the screen image. Concession patronage may be increased in such lighted auditoriums. By day, of course, the theatre looks the same except for the 100-foot, unguyed pole in the center of the last ramp.



A Modern Toll System

Combining A Treadle, Electrical Counting Circuit, And Lighted Indicators For Cash Control

While drive-in theatre operation has adapted most of its equipment and operating methods from its older and more experienced roofed sister, much originality has been shown by drive-in designers and owners. The toll gate principle, designed around a treadle register in the entrance drive, was borrowed from the method found most practical for large traffic movement at toll bridges and tunnels. How it was adapted to the needs of drive-in theatre cash control is here outlined.

A modification of collection systems used at the largest toll bridges and tunnels has been developed for the drive-in theatre market.

Designed to eliminate the siphoning of cash into dubious channels and the hit-and-miss methods of recording admissions at many of these places, especially during peak periods, the new system has resulted from the efforts of Taller and Cooper, Inc., working in conjunction with theatre experts.

The problem of cash disappearance arose 20 years ago when the first of the large toll bridges and tunnels were placed in operation. A system was developed and subsequently considerably improved until a substantially foolproof method for collecting and recording toll receipts was obtained. A modification of this method can readily be applied to the collection of admissions at drive-in theatres.

The components of this system as applied to a drive-in theatre are installed in and adjacent to a booth operated by a collector for each lane. The cashier stands at the door in such a position that he can collect directly from the occupants of the car. The transaction is registered by the collector on the key box which is set on a counter above his cash drawers and accessible as he stands at the door of the booth.

Associated with this key box are:

1. A treadle set in the roadway.
2. An electrical counting circuit actuated by the treadle.
3. An overhead classification indicator.
4. A patron's admission indicator, and
5. A printing and counting device.

Automatic

The work performed in handling a transaction by the cashier consists in registering the number of admissions of each class, such as adults and children, by depressing the proper buttons of the keybox, receiving the cash, and waving the car on. All other functions of the equipment are automatic.

Each cashier or collector is given a key with a distinct identification number. When he opens a booth, he inserts his key in the keybox, turns the key, and operates a print lever. This unlocks the machine, and takes a print of all the counters, the number of the key, the time, and date. Simultaneously, a lamp or sign is illuminated over the booth showing that the lane is open for business.

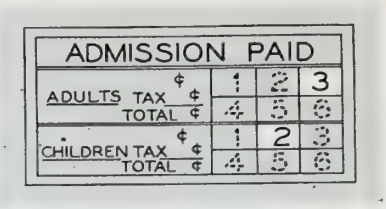
Lights and Bells

An automobile entering the theatre stops at the booth, and pays the required admission. The collector depresses the proper keys in the keybox. This starts the following functions:

1. Adds the proper number of counts to the corresponding counters in the register.
2. Illuminates a sign in the side of the booth showing the patron the number and type of admissions collected.
3. Illuminates a characteristic figure in an overhead indicator which is mounted over the booth and visible for several hundred feet in each direction.
4. Sounds a bell or chime which audibly indicates that the transaction has been registered, and also serves to attract the patrons' attention to the admission-paid illuminated sign on the side of the booth.

Treadle Count

The vehicle now proceeds, and rolls over the treadle counter set in the roadway adjacent to the booth. In passing over the treadle, electrical circuits are actuated in sequence corresponding to the rolling of the vehicle. This and only this sequential operation of the treadle contacts will cause a count to be added to the treadle counter in the register. The treadle will not respond to walking or jumping on it or to any other motion.

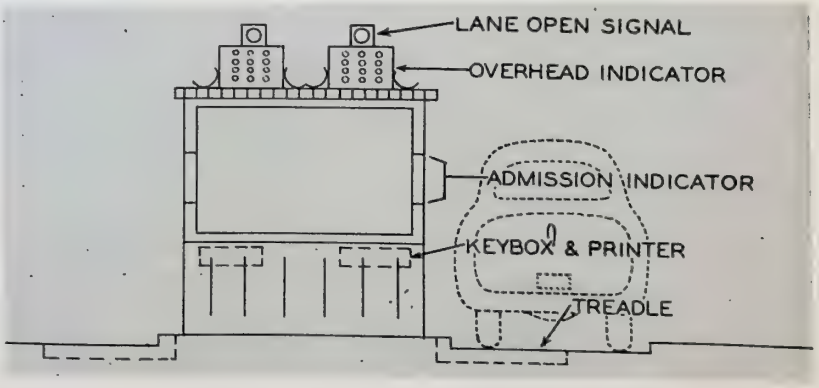


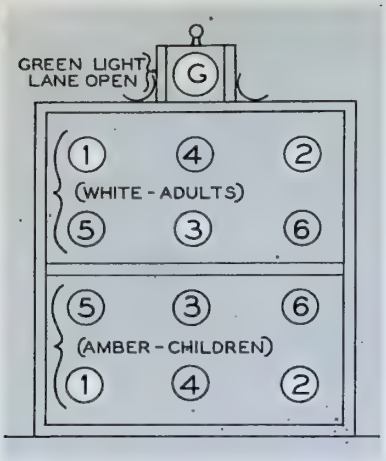
THE ADMISSION INDICATOR at window level with incoming cars is flush mounted in the wall of the booth and illuminates the number of adults (in this case 3) and the number of children (in this case 2) for which admission is paid.

When collector closes his lane, he operates the print lever once again and removes his key. This takes a final print similar to the first print. It also darkens the admission and overhead indicators and the booth-open light.

The collector counts his cash, and turns it in with a deposit slip. The manager or auditor at a convenient time goes to each register, and removes the printed section of the sheet which shows the tabulation of the day's transaction. This sheet will show the time when the lane opened and closed, key number of collector on duty, total number of vehicles counted by treadle, total number of transactions registered by collector, total number of adults, and total number of children. These totals are ob-

ELEVATION DRAWING of the Taller and Cooper boxoffice for drive-in theatres shows the manner in which the: (1) lane open signal, (2) overhead sale indicator, (3) patron sale indicator, (4) key box and printer, and (5) recording treadle, all work in unison to announce and record each cash transaction. Blind checking of a car can be done at any spot around boxoffice where lights can be seen.





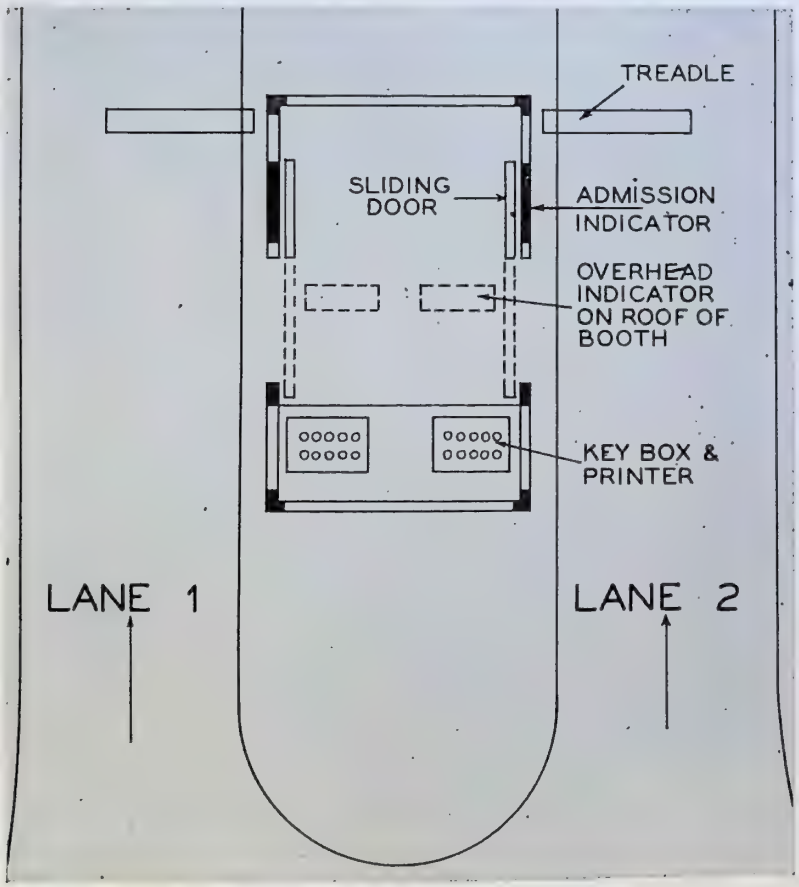
THE DOUBLE FACED OVERHEAD INDICATOR shows the entering patron, by its green light, which lane is open for business; but, most important, its white lights for adults and amber lights for children facilitates spot checking by any exec.

tained by subtraction of the initial and final counter readings.

The company lists the following advantages for its collection system:

1. The patron pays the collector directly and eliminates the use of car hops or runners.
2. There are no tickets to be handled with the possibility of collusion.
3. There are no stubs to be strewn about the grounds.
4. Ticket examination is eliminated.
5. The possibility of distributors and potential competitors learning the number of patrons by comparison of ticket stub numbers is ended.
6. The advantages of audible and visual indications to patrons of admissions registered at each transtion.
7. Overhead indication for the use of supervisor, inspector or manager, enabling him to check a car at any time, some distance before or after it passes the collector, and without collector's knowledge.
8. All pencil work in copying ticket numbers is eliminated. Instead, a clear and tamperproof method is employed to print the counter numbers in a locked compartment accessible only to a responsible person.

PLOT PLAN of a two-lane boxoffice equipped with a double set of indicators, key boxes and treadles. While the designers claim this type of collection system at toll highway facilities enables one collector to handle as many as 500 to 700 transactions per hour, which would be adequate for any drive-in theatre, the added lane may be used at peak periods and would be a standby against breakdowns.





THE ALL-IMPORTANT MAIN ENTRANCE through which the major revenue passes should get prime attention. This is the Kallet, Syracuse, New York.

9. A brief dark period elapses on the admission and overhead indicators between transactions in order that the registration of each transaction may be checked.
10. Each adult transaction adds one unit to the transaction counter and the number of adult admissions to the adult counter. The total transactions recorded must therefore check with the treadle count. (It is assumed that children will never be admitted without adults.)
11. Passes are received, and recorded as adults. The cash differential between total admission price and government tax is easily computed.
12. Because the cashier is unaware of the number of transactions, he must deposit all cash received. Any discrepancy will be evident to the management. Collector performance may readily be evaluated by a comparison of the number of errors in receipts with the general counting record.
13. Operation of the print lever will produce statistical records of admissions at any time. Should statistics be desired every 15 minutes, the cashier will pull the print lever every 15 minutes.

The system is based on the use of a mechanical register in which the keybox button mechanically adds the proper counts to the associated counter. The printer is a part of the keybox and the printed record must be removed from the register in each booth.

In larger installations, it may be helpful to have the remote electrical registers for all booths located in the central office. A remote electrical recorder is actuated electrically from the keybox in the booth.

The experience of Taller and Cooper, Inc., with this type of collection method at toll highway facilities indicates that a collector may handle 500 to 700 transactions per hour in peak periods. By a carefully planned booth system, collection at drive-in theatres can be achieved at close to this rate with only one man per lane, a considerable saving in labor cost over most present methods.

Prefabricated All-Steel Screen Towers

Sloped Design to Eliminate "Keystone" Picture is Added to Rugged Construction

Because the drive-in theatre screen dimensions follow the usual proportions, variations in size are governed completely by the number of ramps and their resultant maximum viewing distances. It was accordingly found that between the very small and the maximum sized car capacity, there were only a few necessary size steps. This permitted more careful engineering than was ever possible under the old, telegraph pole construction; and eventually encouraged fabricators to design prefabricated units in various styles and materials. The first prefabricated all steel screen tower to reach the market is here described.

By Edward Lewin
Sales Manager, Engineering Department
Elizabeth Irons Works, Inc.

An all-steel screen tower, designed to eliminate the objectionable "keystone" picture and improve sight lines, recently was erected at the new drive-in in Totawa, N. J. (See illustration—Ed.)

The tower was prefabricated by the Elizabeth Iron Works, Inc., for the Eastern Drive-In Theatre Corporation, which last year announced plans for the construction of a number of 900-to-1,000-car theatres in New Jersey. Two years ago, the iron works fabricated and set up for the same exhibitors at Morristown, N. J., what was probably the first all-steel screen tower in this country. The tower was 45 feet x 60 feet.

Because of the compactness and well-thought-out design of the tower, J. J. Thompson, Eastern Drive-In executive, stated that the cost of the structure was less than that of the previous tower, which was composed of materials other than steel. Still, the problem of the "keystone" picture remained the bane of drive-in theatre operators. Herbert S. Taylor, engineer for the Park-In Theatres, Inc., made the preliminary drawings which attempted to lick this problem and to improve sightline widths through a concave surface. His drawings of a sloped and concave type of structure were the nucleus of the all-steel rigid frame screen tower engineered by the Elizabeth Iron Works and set up at Totawa.

My enthusiasm and interest in these jobs prompted me as sales manager for Elizabeth Iron Works to promote the building of a compact structure that would combine maximum strength with minimum cost. A. Frank, consultant engineer, collaborated with our engineering department on this project. While the engineers were computing the design with slide rules and tables, a commercial artist was striving for another important effect so essential to exhibitors, esthetic beauty. This last was accomplished in the design of tall, slender, tapering, rigid frame bents, which serve as the main supporting members.

Structural Details

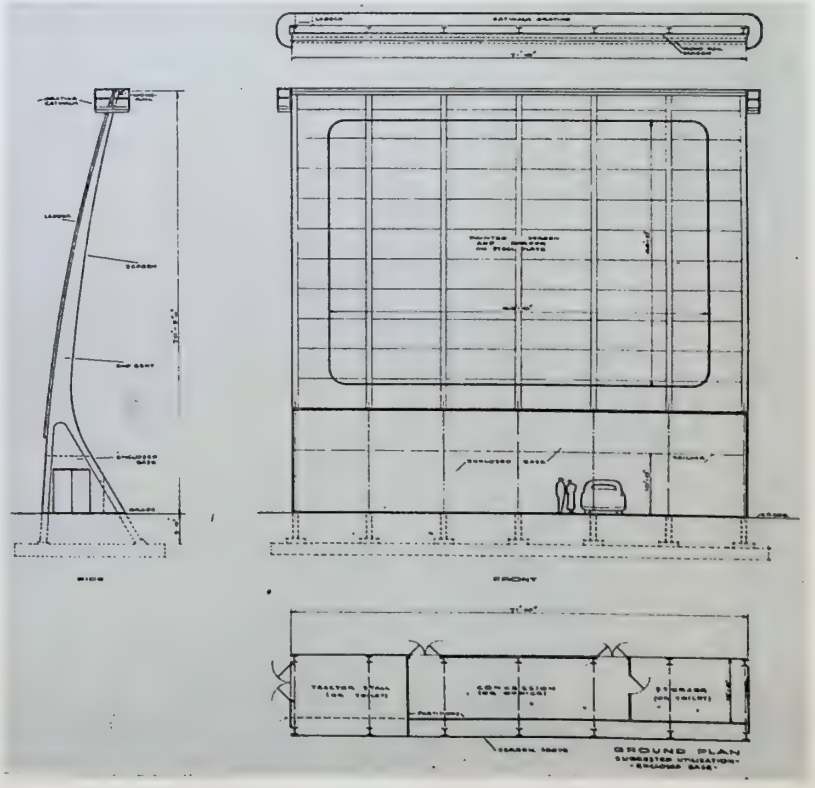
Whether concave-sloped or sloped alone, the tower is designed for a 30-pound-per-square-foot wind load. The structure carries an engineering label guaranteeing it to withstand a 100-miles-an-hour gale.

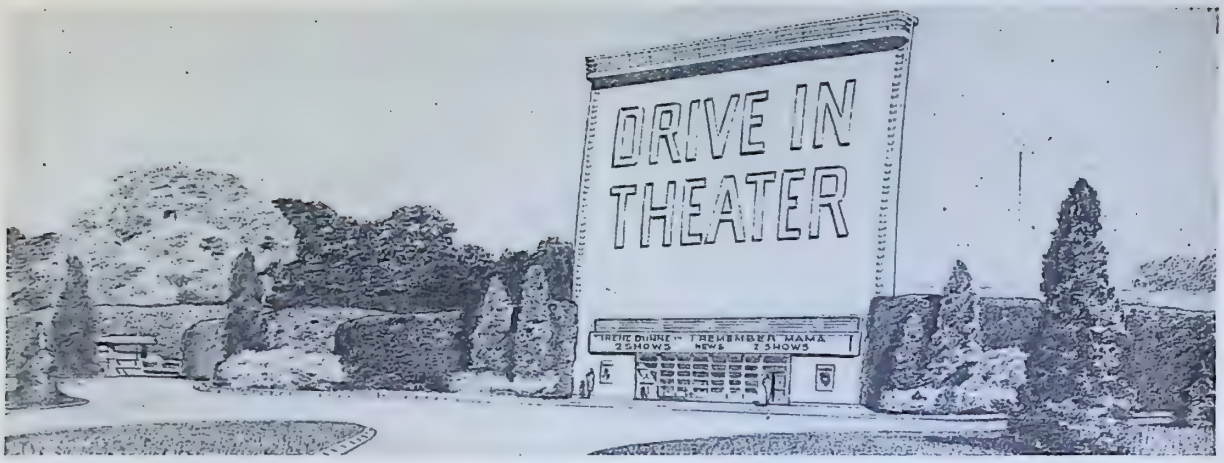
The bents to support the screen surface are of an all-welded construction. Structural shapes and plates incorporated therein are standard commercial No. 1020 steel. The wind bracing struts between the bents are made of 5 inch steel pipe and plates welded to form a rigid section. The rounded surface of the pipe avoids the settling of water or snow which would cause extra weight and maintenance.

The screen surface is made of ⅛ inch thick steel plates ribbed and stiffened by flat bars and angles, which are welded to the plates. The angles serve the dual purpose of strength and the means of securing the screen surface to the bents. The steel plates are accurately cut and fitted so that a minimum of joint opening is apparent. It is suggested, for a more desirable effect, that all such joints be caulked before the first coat of field paint is applied.

A minimum of maintenance is further accomplished by the use of an open type grating walkway at the top and back portion of the screen, which is reached by a ladder. This walkway runs the complete length of the structure, and extends around to the front of the screen surface on both sides for quick and inexpensive scaffolding. This is further augmented by a monorail beam arrangement which allows for portable maintenance service of the entire screen

FROM THIS DRAWING can best be understood the design features of sturdy base; catwalk grating and monorail for future servicing; and potential usable space of the support area. This last, with a firm concrete floor and good headroom could prove invaluable for office, concession stand or storage use.





THIS IS A SKETCH of a concave all-steel drive-in theatre screen as seen from the highway. Prefabricated by the Elizabeth Iron Works, the towers are available in three sizes, for theatres holding 400, 650, and 1000 cars respectively. A unit serving a 650 theatre can be erected in six days. The structure is compact, powerfully built, and yet is most graceful in its majestic slope. A minimum of maintenance is required.

surface, and is a permanent part of the tower.

Sizes and Erection Costs

The screen towers are available in three sizes as follows:
38 feet x 50 feet screen surface for a 350—400 car theatre.
44 feet x 60 feet screen surface for a 450—650 car theatre.
53 feet x 72 feet screen surface for a 650—1000 car theatre.

For the overall height, to the above sizes must be added the leg sections, which will vary between 17 feet and 19 feet in height, depending on the location of the screen tower in proximity to the projection booth.

Though prices for comparison are not readily available, it is believed that the cost of any of these screen towers erected is no more, and, in most cases, considerably less, than the average combinations of materials and temporary types of structures now being built throughout the country.

Simple and complete sets of detail erection drawings come with each purchase. For example, a 44 foot x 58 feet screen tower can be erected in six days at a cost of less than $1500. This figure is based on the AFL wage scale in metropolitan New York.

Concave-Sloped or Sloped Screens

For those exhibitors who feel the need for a concave-sloped screen to help increase the viewing angle, the Elizabeth Iron Works, under license arrangements with Park-In Theatres, who have applied for the patent, make this feature available to the latter's licensees at no extra charge in royalties or fees.

However, the straight-surface, sloped-type screen to eliminate the keystone is an exclusive of the Elizabeth Iron Works and is available to whoever desires to purchase without royalties or licensing of any kind.

Concrete Foundations

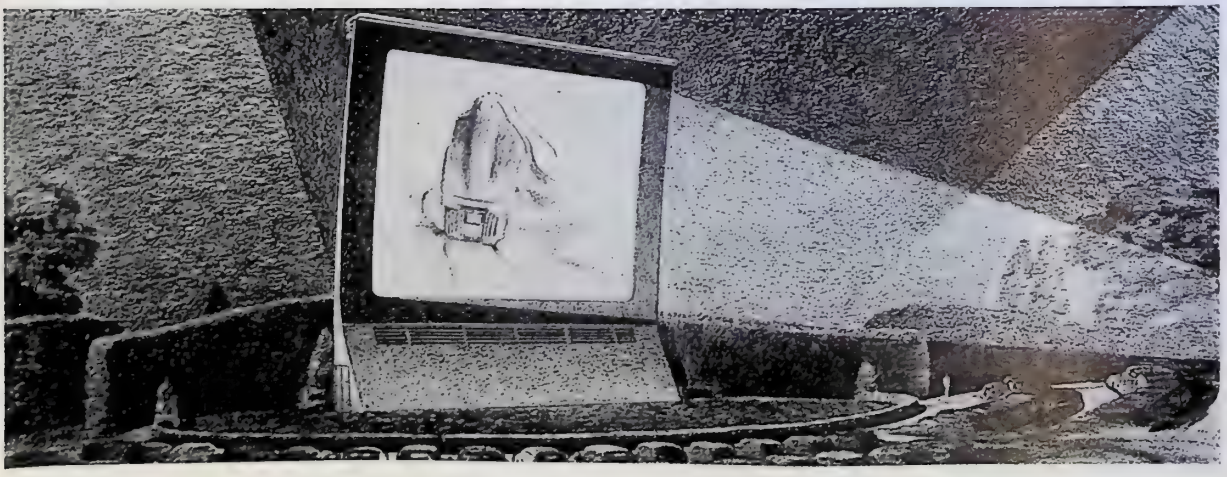
The foundations, of steel reinforced concrete, are not included in the purchase price. This work should be done by a reliable contractor. Varying of course with location and type of soil, it is estimated that a 44 x 60 feet tower would require 83 yards of concrete costing $996.00, plus $450.00 for steel reinforcing bars.

Utilizing Base Openings

The open area formed by the leg sections of the structure lend themselves admirably to an inexpensive means of attaining the use of a building 14 feet to 16 feet wide at the base by 60 feet or 72 feet depending on the size screen, and with ample head clearance.

The arch and leg sections acting as the supporting members can be drilled for the fastening of wood, masonite sheets, or corrugated steel sections. This enclosure could be used for storage of equipment, concession booth or manager's office and living quarters. (A suggested layout is shown in the sketch.)

A SKETCH of the tower from inside the theatre reveals the slope of the screen which does away with the "Keystone" projection usually found to be objectionable. The main supporting members of the screen are tall, tapering frame bents, while the screen surface is composed of 1/8 of an inch thick steel plates ribbed by flat bars and angles. At the top and back portion of the screen is an easily reached open-type grating walkway.



Guess Work Vs. Certainty

The exhibitor who argues the cheapness of the wood telegraph pole or cinder block masonry type of structure for a minimum investment loses sight of the gamble he is taking in guessing the structural strength of this type of construction as contrasted to the hard-fact-engineering and proven-guaranteed principles of the permanent steel tower.

If his soil is bad or the termites get into his poles, in a few years he finds that between replacement and maintenance, he has spent the difference in cost of a sound permanent structure. If masonry of any sort is used, he faces settlement cracks and other weaknesses that are unpredictable.

The outdoor theatre is here to stay, and the man who thinks and invests with an eye to the future of this enterprise will get a bigger and better return on his investment.

Time has proven that the well-built and soundly-engineered structure, whether a bridge, building or sign board, is the least expensive over a period of years. If, by any chance, a location is moved or a theatre enlarged, necessitating the moving of the screen tower, this all-steel, field-bolted structure can be taken down, and reassembled inexpensively. The wood or combination-of-materials type of structure must be destroyed or demolished.

Esthetic Value

For the most part, the men who are in or contemplating the drive-in theatre business are those who now operate, and have operated for years, the conventional type of theatre. To those men, eye appeal is an old and well known part of their business.

The small neighborhood theatre with its well-decorated interior and modern, beautiful exterior is an accepted and essential part of public appeal.

The outdoor theatre, too, is designed to please the customer. The all-steel tower, the tallest eye-catching item in the theatre, has simplicity and beauty in its modern and graceful lines. It contrasts sharply with the ugly squared bulk of the older tower installations.

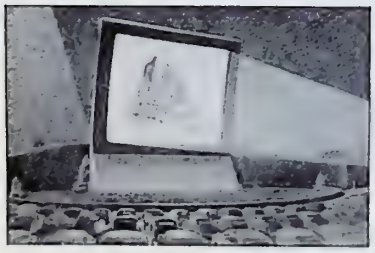
It is the sign board and marquee the patron sees when entering the drive-in.



THE STRONG, RIGID BENTS are of an all-welded solid steel construction prefabricated in the steel mill. The bents are now transported to the area of the drive-in and the workmen must first bolt and later weld the legs onto the structure and get things ready for erection by the crane. A few minutes later, one bent is already up, and a close-up reveals the wind-bracing struts between the bents. The struts are made of five-inch steel pipe and are rounded so that the accumulation of water and snow is avoided. Then another bent is hauled into standing position and joins its partner with the crane's assistance. Finally, all seven stand majestically and solidly. Now work on the screen surface begins as the 1/8-inch thick steel plates are set in place. The plates are ribbed and stiffened by flat bars and angles welded to the plates themselves. The angles give strength and also serve as a means of securing the surface to the bents. Finally, the tower is seen in its last stages with just a few plates remaining for insertion and completion. A total of only six days' erection time is needed, so simple is the design.



If you are planning or operating a Drive-In Theatre...
OUR 15 YEARS' EXPERIENCE IS AVAILABLE



This new concave screen tower, designed for faithful and more brilliant picture reproduction, has been developed for prefabrication and national distribution. It is a current example of continuing engineering study by Park-In Theatres, Inc.

As the pioneers of the drive-in theatre industry, Park-In Theatres, Inc. has developed a "know-how" in this business that can make a real contribution to your success. Our experience proves that we have actually saved many of our licensees considerably more than the total of our licensing fee over a period of years.

If you are planning a new operation in an unlicensed territory, our free engineering service can make savings of as much as two-thirds of the earth-moving cost and can provide finished working drawings for screen towers, box offices, projection booths and other essential units.

For theatres already in operation, we can be of material assistance in acquainting you with the improved lighting and screen equipment and more efficient sound systems which have been developed from our engineering research activity.

If you are not familiar with our licensing arrangements under the pioneer drive-in theatre patent*, we suggest that you communicate with us promptly. We will be happy to explain our complete service.

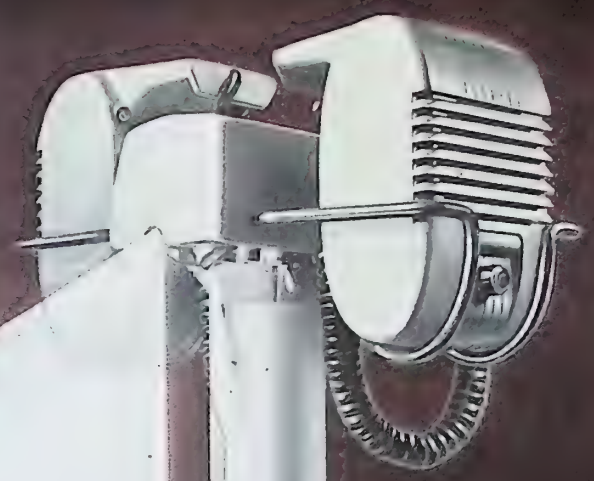
PARK-IN THEATRES, Inc.

840 Cooper Street **Camden, New Jersey**

*U. S. Patent 1,909,537

For Drive-Ins...

RCA has everything



New...RCA In-Car Speakers

...equipped with lights that aid patrons when parking cars

The In-Car Speaker, first introduced by RCA, was a sensational development that revolutionized the entire drive-in business. RCA again leads the way with another first, and a great advancement.

Roadway and Post Light. From a single lamp built into the junction box, a lens focuses a beam of light into the darkened roadway between ramps. Patrons see where they are driving when entering and exiting ramp areas. From the same lamp source, another lens directs a beam of light directly down over the speaker post. Patrons more easily guide their cars to the correct location on the ramps. Speaker posts are protected from collision damage by cars. This new lighting system eliminates the need of other kinds of lighting during the show. It's a new advancement hailed by leading drive-in experts as the answer to today's problem of expediting traffic in and out of ramp areas.

Concession Signals. Two types are available for exhibitors who prefer this added feature.

Newly Designed Speaker Housing makes it easier to hang the speaker in the car. Speakers are smartly styled, have an individual volume control. They provide that richness of tone for which RCA speakers are famous.

Time-Tested Speaker Mechanism. Completely weatherproofed. Over a quarter of a million now in use in drive-ins all over the U.S.A.

See Next Page...

RCA RADIO CORPORATION of AMERICA

13 *Complete* Drive-In Systems

Equipment for every need from one source of supply

MORE AND MORE drive-in operators are going "RCA All the Way" in the selection of theatre equipment for their drive-ins. All the projection and sound equipment you need to operate a drive-in can be secured on one order from your Independent RCA Theatre Supply Dealer.

Out of RCA's years of leadership and experience in the development and application of projection and sound equipment for drive-ins comes this new plan of complete drive-in systems. RCA offers you the widest selection of equipment. From it you can select a system tailor-made for your drive-in needs. Your Independent RCA Theatre Supply Dealer will help you plan your specific requirements.



RCA In-Car Speakers



RCA Super Power Amplifier
750 watts



RCA High Power Amplifier
280 watts



RCA High Power Amplifier
140 watts

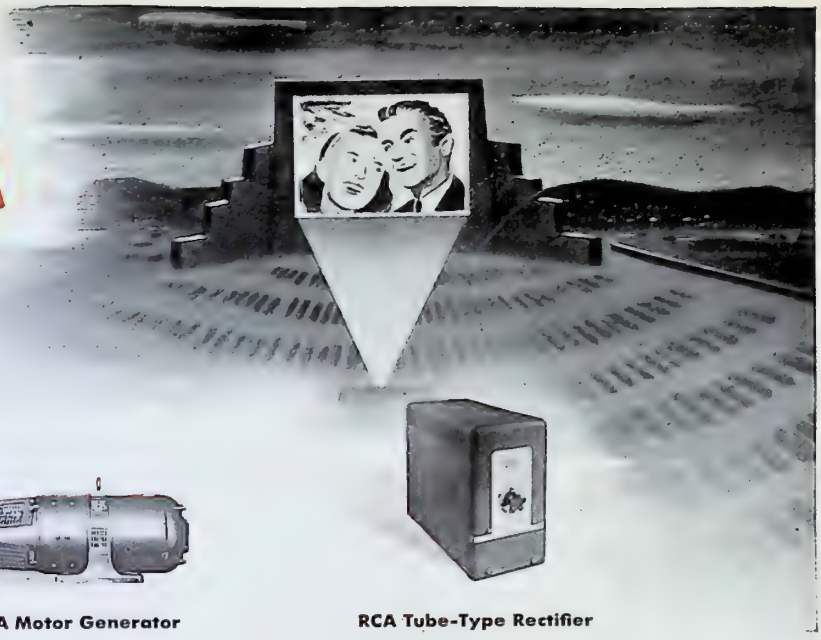
13 RCA Drive-In SOUND SYSTEMS

Power from 70 to 1000 watts for Drive-Ins from 200 to 4,[illegible] cars

RCA Sound Systems for Drive-ins provide greater flexibility. Additional power amplifiers can be added—if quired at a later date.

HIGH	SUPER	DE LUXE
PG-270	PG-280	PG-[illegible]
PG-271	PG-281	PG-[illegible]
PG-272	PG-284	
PG-275	PG-285	
PG-276	PG-286	
	PG-287	

—by RCA

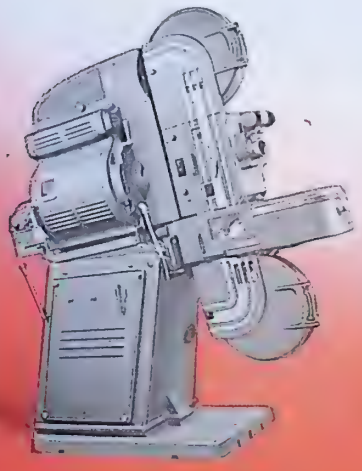




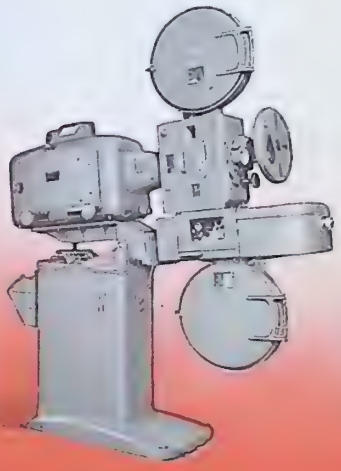
RCA Plate Rectifier

RCA Motor Generator

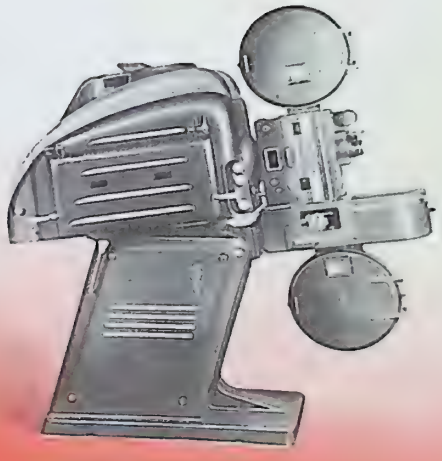
RCA Tube-Type Rectifier



Brenkert "80" Projector with Enarc Lamp



Brenkert "60" Projector with Radarc Lamp



Brenkert "80" Projector with Supertensity Lamp

13 RCA Drive-In PROJECTION SYSTEMS

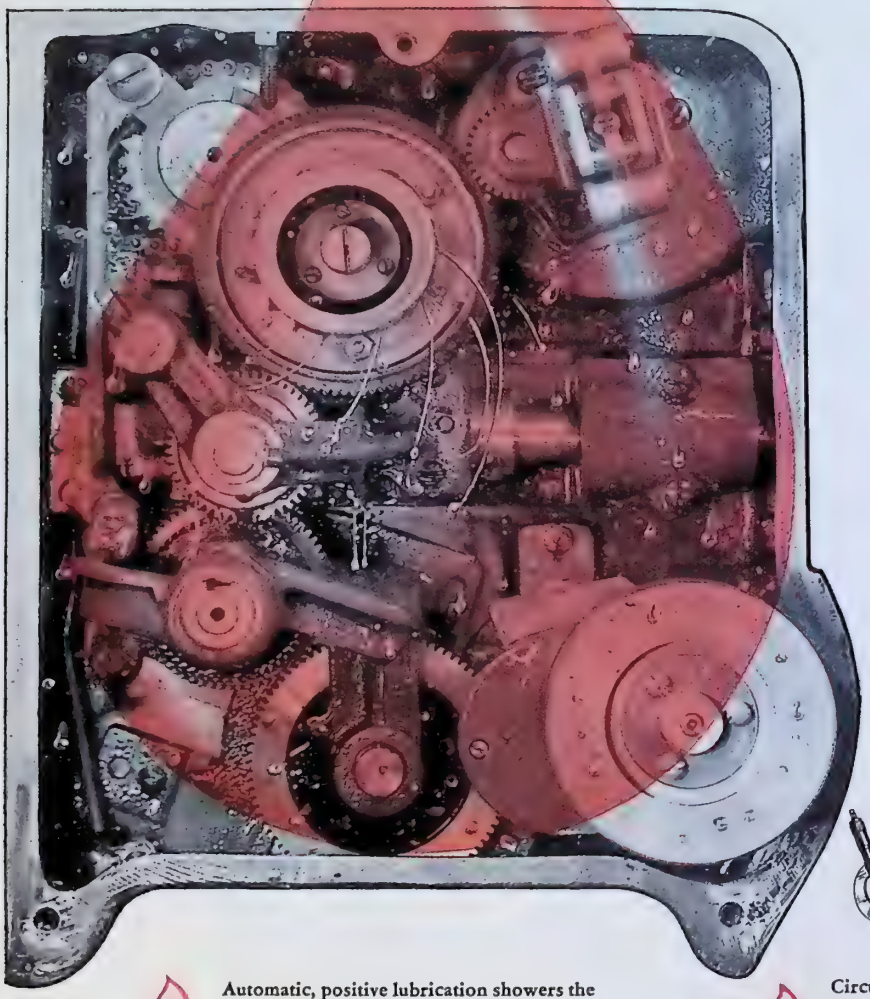
for Screen Sizes from 20 to 80 feet in width

[illegible]tter what your requirements may be, RCA [illegible]upply you with the right combination of [illegible] projector, arc lamp and power supply [illegible]hat assure you the kind of Drive-In Projec-[illegible]em that meets your need.

RCA Drive-In Projection Systems are designed to provide an abundant supply of snow-white light, and rock-steady projection for the extreme conditions encountered in the projection of motion pictures in drive-in theatres.

RCA RADIO CORPORATION of AMERICA

Automatic Lubrication



For over 10 years has assured long lasting, high-quality performance in

BRENKERT PROJECTORS

MADE BY RCA

1. Automatic, positive lubrication showers the gear compartment with oil, eliminating friction in moving parts.

2. You get lasting, high-quality performance, longer wearing of all parts—no worry about bind-ups. Brenkert dustproof gear cover prevents dust from settling on any moving part in the mechanism.

3. Circulating oil keeps projector mechanism cool. This feature is particularly important in drive-ins where high amperage arcs cause intense heat.

RCA

THEATRE EQUIPMENT
RADIO CORPORATION of AMERICA
ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

In Canada: RCA VICTOR Company Limited, Montreal



The ***NEW*** **STRONG MOGUL**

70-AMPERE • 40-VOLT PROJECTION ARC LAMP

projects 15,000 lumens — the MAXIMUM light that film will accept without damage!

When the lamps are ***STRONG*** *the picture is bright!*

STRONG
SINGLE PHASE
80-AMPERE TUBE RECTIFIERS
for use in Drive-In Theatres where only single phase power is available.
Other Strong Rectifiers Available for all Conditions

WRITE TODAY FOR COMPLETE LITERATURE OR FREE DEMONSTRATION

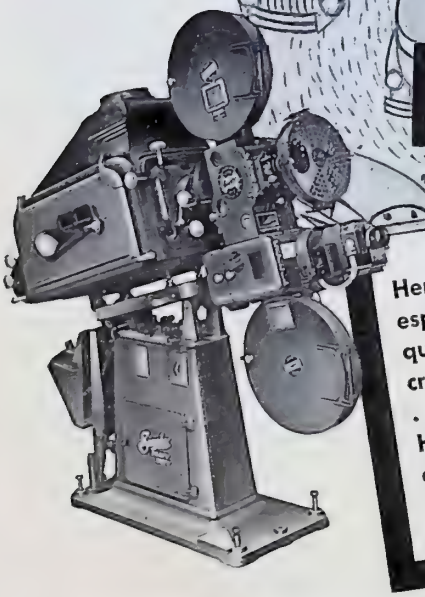
THE STRONG ELECTRIC CORPORATION
87 CITY PARK AVENUE
TOLEDO 2, OHIO

The World's Largest Manufacturer of Projection Arc Lamps — the only Lamps produced complete within one factory.

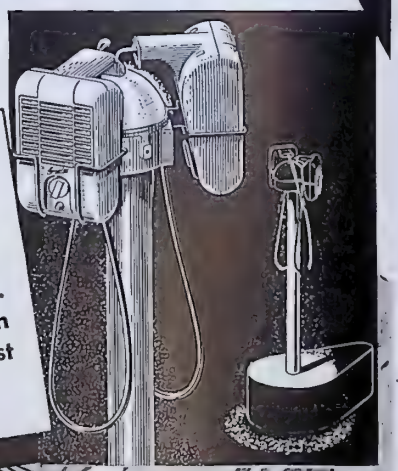
They all "drive-in" when you install Simplex

T.M. REG. U. S. PAT. OFF.

Drive-in theatre Equipment



Here's the projection and sound equipment especially designed to meet the unusual requirements of drive-in theatres . . . bringing crystal clear projection to the great screens . . . life-like sound right to the patron's car. Here is SIMPLEX . . . the equipment which assures motion picture presentation at its best . . . larger patronage . . . greater profits!



BUY SIMPLEX . . . THE CHOICE OF SUCCESSFUL DRIVE-IN THEATRE OWNERS EVERYWHERE!

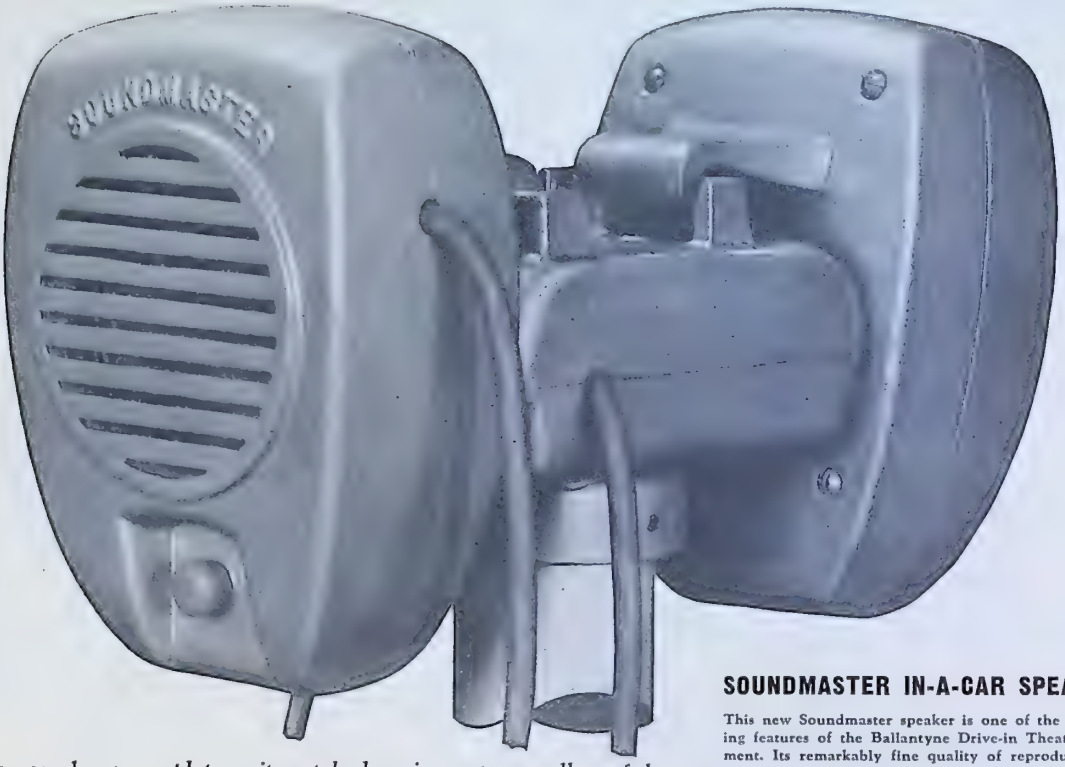
NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc

A UNIT OF NATIONAL STANDARD PROJECTION SYSTEM


NATIONAL THEATRE SUPPLY has your Drive-In Projection and Sound Equipment in a complete "package" including . . .
PROJECTION EQUIPMENT
• Simplex Projectors
• Simplex "Up-Tilt" Pedestals
• Peerless Arc Lamps
• Hertner Transverters
SOUND EQUIPMENT
• Simplex Sound Systems
• Simplex In-a-Car Speakers
• High-Powered Amplifiers
A UNIT OF NATIONAL STANDARD PROJECTION SYSTEM
NATIONAL
THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc

ROYAL SOUNDMASTER

Complete, Low Cost, Drive-in Sound and Projection Equipment!

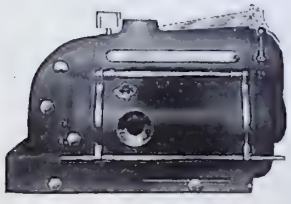


Now you can have *complete unit matched* equipment, regardless of the size of your drive-in theatre, from *one* manufacturer . . . equipment whose quality of reproduction, workmanship, appearance, and *low cost* defy comparison.



THE NEW MX SERIES AMPLIFIERS

Consists of a driver amplifier, one or more power amplifiers, and an exciter supply as well as ramp monitor control and switching panel. Provides greater power, greater flexibility, outstanding quality of reproduction, and complete and efficient amplification control of the entire speaker system.



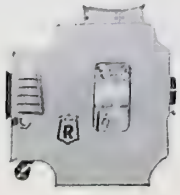
LIGHTMASTER ARC LAMPS

The new Model 4570 Lightmaster provides a steady, brilliant light for perfect drive-in operation, projecting the accepted maximum of 15,000 lumens at 70 amperes.



SOUNDMASTER HI-TILT BASES

The already famous Soundmaster bases are available with a reverse angle, hi-tilt feature at no extra cost. The lamp carriage is designed to accommodate extra large drive-in lamps such as the Lightmaster.



Model "R" Projectors

Unexcelled in performance, easy to operate, low in initial cost and maintenance.

SOUNDMASTER IN-A-CAR SPEAKERS

This new Soundmaster speaker is one of the outstanding features of the Ballantyne Drive-in Theatre equipment. Its remarkably fine quality of reproduction, its sturdiness, and its appearance make it the best speaker buy available . . . yet it costs far less than anything approaching it in quality.

The case is made of sand cast aluminum, light in weight, easy to handle, yet practically indestructible. The new design speaker sets in a unique floating torsional mount which prevents warping or pull on cone speaker, and is fully weather-treated. The entire speaker is unconditionally guaranteed for one year from installation. The junction box, with the same baked-on Hammerloid finish as the speaker, is designed to fit any standard 2" post with adaptors for other sizes available at no extra cost.

The complete line also includes:
Royal Soundmaster Soundheads, Lightmaster Rectifiers, car-side speakers, and directional signs for drive-ins, as well as complete sound projection equipment for indoor theatres.

Backed by a reputation established over two decades, Royal Soundmaster Drive-in Theatre equipment offers incomparable quality at a saving of not one, but several thousand dollars! For efficiency, durability and economy your best buy is Royal Soundmaster.

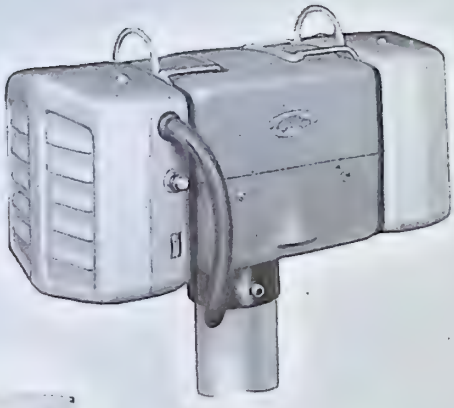
Send immediately for our new, beautifully illustrated, in-color, drive-in equipment brochure.

THE BALLANTYNE CO.
1707-11 DAVENPORT STREET
OMAHA 2, NEBRASKA, U.S.A
"CABLE ADDRESS BALCO"

For the Evening...

CHOOSE THE *Finest*





In-Car Speaker

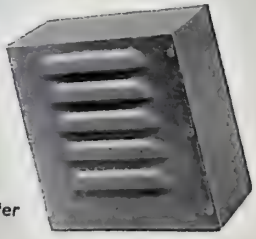


Control Panel



Ramp Beacon

and for the finest in drive-in theatre equipment it's Auto Voice In-Car speakers with post illumination and talk-back feature-ramp control panels-ramp beacon lights and individual in-car heaters. Write for particulars.



Heater

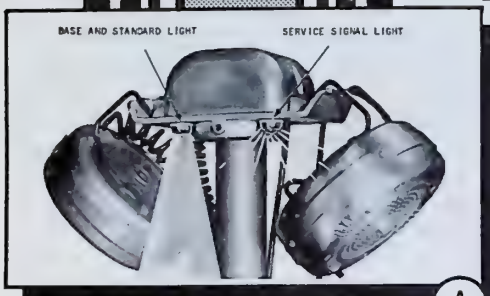
DRIVE-IN THEATRE EQUIPMENT CO., INC. Auto-Voice CLEVELAND, OHIO

DRIVE-IN THEATRE EQUIPMENT CO., INC.
2110 SUPERIOR AVE. CLEVELAND 14, OHIO

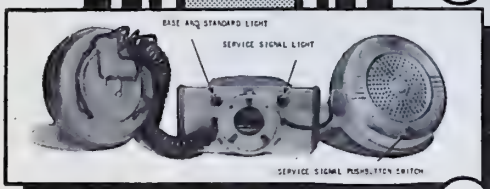
FOR EXCEPTIONALLY FINE SOUND AND EQUIPMENT THAT TAKES THE ABUSE OF PATRONS AND WEATHER

MOTIOGRAPH

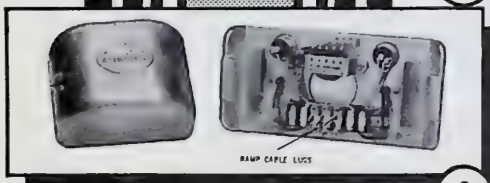
DRIVE-IN THEATRE SOUND SYSTEMS



A



B



C



D

The Motiograph line is most complete. There are 6 in-car speaker sound systems, with power output of 100, 150, 3 of 250 and two of 500 watts, the largest of which will serve more than 1000 cars, and has emergency provision permitting operation at 50, 250 or 500 watts.

The Motiograph in-car speaker, larger than most units, is of quality manufacture, fabricated from heavy gauge drawn steel, plated and finished in light blue enamel. A special rubber-covered hook provides support at any desired position in the car. A constant impedance volume control is mounted in a recess in the front. Coiled cord or theft-proof connection cables are optionally available.

The in-car speaker unit is weather-proofed, the cone water-proofed and the metal parts are treated to resist corrosion. The characteristics of this unit are exactly matched to the acoustical characteristics of the speaker housing resulting in exceptionally good tone quality.

Figure A illustrated the Motiograph SE-7550 in-car speaker junction box with base and service signal lights. The base and standard light illuminates the supporting standard and speaker, reducing traffic hazards. The service signal light has a red lens to attract attention of vendor and is turned on or off, by a toggle switch on in-car speaker. The in-car speaker on the left, SE-7548, has a blue enamel finish and coiled cord. The in-car speaker on the right, SE-7547, has a brushed cadmium finish and straight cord.

The junction box mounts on unthreaded pipe or tubing up to 3½" O.D., without the purchase of flanges or adapters, as shown in Figure B.

The interior of the junction box, light sockets, terminal block and adjustable impedance matching transformer are shown in Figure C.

The Motiograph SE-7558 Ramp Switching Panel is shown in Figure D. The Motiograph SE-7555 Ramp Switching Cabinet, Figure E, shows an upper row of switches for controlling ramp sound feed circuits. Red jewels indicate lighting circuit operation. The individual ramp sound circuit monitor switch and speaker is shown above the main control panel.

The Motiograph-built turntable has been designed both for the new long playing and other types of records.

Motiograph also makes available an AM and FM radio set and microphone which may be utilized with the Motiograph Sound System.

There are two Motiograph central loudspeaker systems, with power output of 75 and 150 watts.



E

For literature and complete information write

For further details on the Motiograph Sound Systems, please refer to another of our ads in this catalog under the heading of Sound.

MOTIOGRAPH, INC., 4431 W. LAKE ST., CHICAGO 24, ILL.

EXPORT DEPT.: FRAZAR & HANSEN, LTD., 301 CLAY ST., SAN FRANCISCO 11, CALIFORNIA

Complete Drive-in Equipment and Construction Service!

● ● ●

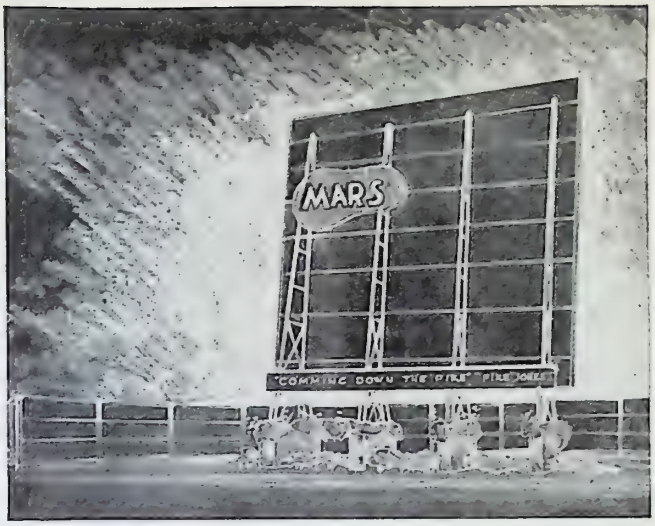
for Steel and Wood Towers

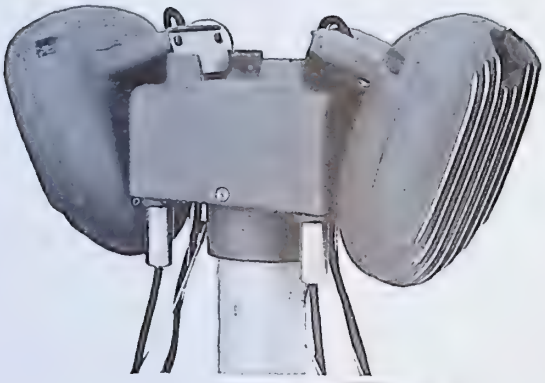
We contract at a fixed price to completely design and engineer your screen tower, foundation, screen surface and wings. Efficient erection procedure and ample supply of fabricated sections usually enables us to complete the job within 3-weeks. Complete insurance coverage is carried during construction for owners protection.

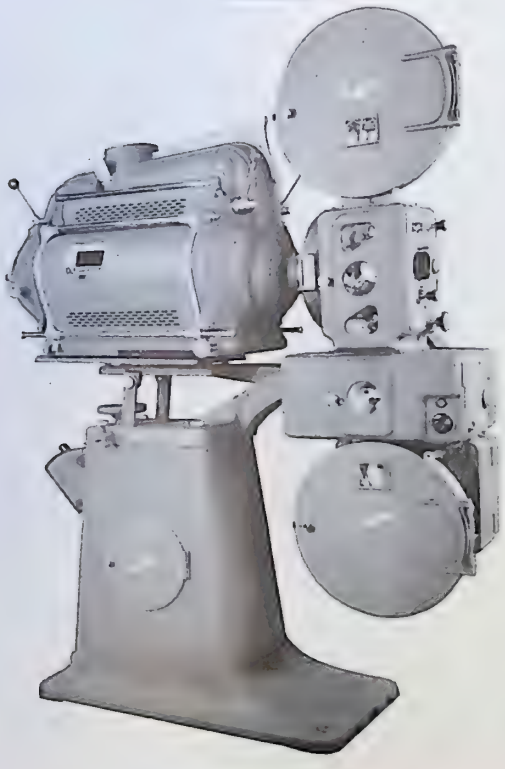
Scientifically designed foundation beams assure maximum stability and exceptionally high wind ratings. Built-in tilt feature. Our new screen surface results in a picture of superior quality.

Unusual soil conditions solved scientifically.

A wide selection of designs.







For an In-The-Car Speaker *"That's Proven Dependable"* Install "TECA" Speakers

Parts maintenance cost for the thousands of "TECA" Speakers in service has averaged less than 1c per season, per speaker . . . the lowest known. "TECA"' Speakers have been designed to last a lifetime. The cast aluminum case can be run over by a car without damage.

Only the best materials are used in the construction of the "driver unit". It is of highest power sensitivity and assures natural tone. Speakers plug-in and lock. Cast aluminum junction box clamps on.

Impervious to Weather • Built-in Volume Control • Reasonably Priced

● ● ●

Drive-ins and Theatres in Ohio, Indiana and Michigan are Invited to Contact us for:

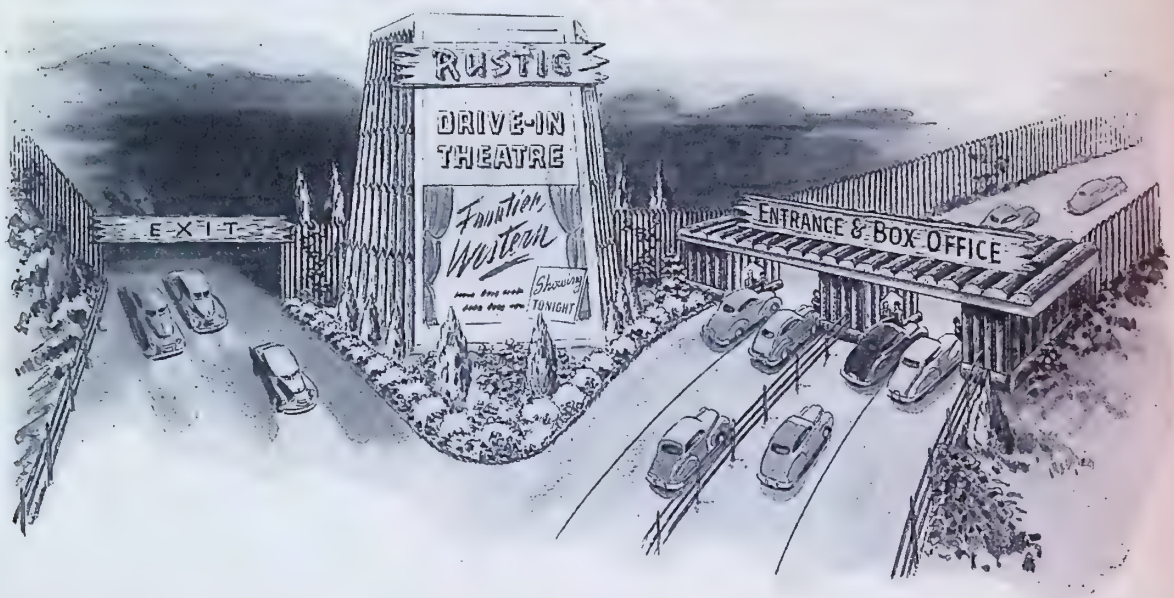
- Century Projectors
- Century Sound Systems
- Strong Projection Lamps
- Strong Utility 1 K.W. Arc Lamps
- Strong Precision Reflectors
- Strong 2-Tube, 4-Tube, 6-Tube, and Copper Oxide Rectifiers
- Ideal Chairs
- Golde Spotlights, Rewinds, Ticket Boxes
- Da-Lite Screens
- Neumade Film Cabinets, Splicers, Reels, Cans, Booth Work Benches
- Blacklight Equipment
- Gordos Tungar Tubes
- Ampro 16 MM. Projectors
- Kollmorgen Super Snaplite Lens
- Wagner Marquee Frames and Multi-size Changeable Translucent Colored Plastic Letters
- General Register Automaticker Machines
- Curtain Tracks and Controls
- Coinometer Change Makers
- Sunroc Water Coolers
- American Floor Mats
- Stage Rigging
- Carpeting
- Westinghouse Lamps and Fluorescent Tubes
- Radiant Exciter and Projection Lamps
- National Carbons

THEATRE EQUIPMENT CO.

107 MICHIGAN STREET • Ph. Adams 8107 • TOLEDO, OHIO

FENCING IN RUSTIC

THE "Showmanship Setting" FOR DRIVE-IN THEATRES



STOCKADE FENCING: Stockade fencing designed for open-air theatres—made of hand-peeled split white cedar posts with three full round stringers fitting into mortised line posts for easy erection. Factory fabricated sections 6'10" high and 6'10" wide. When installed the over-all dimensions are approximately 7' high and 7' wide. Weight: approximately 150# per section.

TICKET OFFICE AND REFRESHMENT STANDS: Rugged Michigan log buildings for ticket office and refreshment stands. Amazingly inexpensive and easily assembled from factory-built precision sections.

BUMPER FENCING: Knife-peeled, full, round rail fence available in one to four rail heights. Easily assembled into mortised line posts.

RUSTIC IS BOX-OFFICE — CREATES ATMOSPHERE THAT FITS INTO NATURAL SURROUNDINGS OF THE OUTDOOR THEATRE

(1) LOW COST: Factory fabrication eliminates the necessity of skilled workers for installation.

(2) EASY INSTALLATION: All that is necessary is to place the tenoned ends of the sections into the mortised line posts which give rigid support.

(3) DURABILITY: Thoroughly air dried saplings insures fully seasoned pickets that will not shrink or warp after erection. Treated with wood preservative optional.

(4) BEAUTY: Nature's most beautiful and durable wood made exclusively of northern Michigan white cedar, carefully hand-peeled to create the natural effect desired for drive-in theatre landscaping.

(5) IMMEDIATE DELIVERY.

If structures are of unusual size, we also have available loose machine and prepared logs ready for assembly.
Literature and prices available on request.

We invite inquiries and will cooperate with open-air theatres, architects, suppliers and builders.

FENCE COMPANY of AMERICA

Sales Office and Showrooms: 608 SO. DEARBORN ST., CHICAGO 5, ILLINOIS
Factory: ESCANABA, MICHIGAN

Front and Lobby

GLASS FOR CONSTRUCTION AND DECORATION 282
A Review of the Versatile Possibilities and Trouble-Free Functional Values of This Theatrical Material

THE NEW PATENTED INNER-SERVICE MARQUEE
Ben B. Poblocki 290
A Specially Designed Room and New Light Source Provides Working Space, Storage and Efficiency

PLASTIC-FINISHED PANELING IN THEATRE DECOR
Simon A. Kinsey 299
New Materials Provide Economical Means of Creating Attractive and Practical Interiors

Interior and Auditorium

BLACK LIGHTING MADE EASY .....*Ronald J. Elliott* 316
The Elementary Facts About Theatre Use and Introducing a New "Packaged" Mural with Theatre Possibilities

DESIGN AND COLOR BLENDING TRENDS 319
Leading Theatre Decorators Give Their Views on the Outstanding Decorative Developments in 1948

SPACE ACOUSTICS .....*James Y. Dunbar* 324
A General Discussion as Presented Before the Atlantic Coast Section, SMPE, in New York on February 19, 1947

SUGGESTIONS FOR BETTER THEATRE LIGHTING
Stanley McCandless 327
Proper Lighting Enhances Patrons' Comfort While Providing an Attractive Atmosphere

THEATRE DIMMERS .....*Daniel M. Rollins* 330
Analysis of All Available Theatre Types and Their Recommended Installation and Maintenance Practices

SOURCES OF EMERGENCY AND STAND-BY ELECTRICITY 337
Strikes, Storms, and Shortages Point Up the Wisdom of Adequate Independent Lighting and Power Supply

FUNDAMENTALS OF CORRECT THEATRE SEATING
Felix W. Alexa 342
The Relationship of Planned Sightlines to Spacing and Floor Slope that Insures Adequate Vision to Patrons

MODERN METHODS OF THEATRE CLEANING
Richard Webber 346
A Review of the Advantages of Vacuum Cleaning and the Modern Equipment Available for the Purpose

Projection and Sound

LIGHT GENERATION BY THE HIGH-INTENSITY CARBON ARC .....*F. T. Bowditch* 390
Theoretical Considerations Assembled in the Course of Arc-Carbon Research and Development

HIGH-INTENSITY PROJECTION ARC LAMP
Charles A. Hahn 393
Supply Source for the Great Amount of Distributed Light Needed at Larger Theatre and Drive-In Screens

NEW MOTIOGRAPH-HALL 75/115 HIGH INTENSITY LAMP 398
An Introductory Report that Promises Much from a New Basic Approach to Well Distributed Screen Brightness

RESULTS OF ELECTRONIC CONTROLLED ARC TESTS
J. K. Elderkin 400
Additional Data on Actual Theatre Use of New Forest Lamp Indicates Good Light at Carbon and Power Saving

A NEW LINE OF PROJECTORS AND SOUND ....*J. R. Hoff* 402
Ballantyne 1948-49 Equipment for Theatre Sound and Projection Offers One More National Equipment Line

A NEW 35MM. PROJECTOR FOR THEATRE USE
R. H. Heacock 405
Details of the Purpose, Engineering, and Operating Factors of the Recently Introduced "Brenkert #60"

A LIGHT DUTY AND PORTABLE 35MM. SOUND PROJECTOR 409
The Post-War Return of a Quality Product to Serve Small Theatres, School Auditoria or Industrial Uses

Heating, Ventilating and Air Conditioning

GLYCOL VAPOR: LATEST IN AIR PURIFICATION..... 436
Product and Application Information on Triethylene Glycol Which Promises Efficient and Simple Theatre Use

THE PROBLEM OF AIR DISTRIBUTION IN A THEATRE.. 438
A Round-table Discussion of a Specific Question on Heating and Cooling a Theatre by Forced Air

MAINTENANCE TIPS FOR USERS OF FREON-12..... 442
Five Series of Suggestion for Theatremen in Handling the Refrigerant and Cylinders

A DIFFERENT MORE EFFICIENT AIR DIFFUSER
T. A. Hughes 444
Square or Rectangular to Conform to Interior Design Modern Diffusers Provide 100% Distribution Control

Miscellaneous Supplies, New Products and Supply Dealers

THEATRE SUPPLY DEALERS OF THE UNITED STATES.. 456
Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

FACTORS AFFECTING THE OPERATION OF BRUSHES... 472
Small in Size and Inexpensive, too Little Attention is Given Their Maintenance and Effect on Equipment

BOOK TWO:
Equipment

SUPPLY DEALERS OF THE DOMINION OF CANADA 473
Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

SUPPLY DEALERS OF THE REST OF THE WORLD 474
Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

Advertising:

ADAM, FRANK, ELECTRIC CO. 364
ADLER SILHOUETTE LETTER CO. 302, 303
AMERICAN MAT CORP. 310
AMERICAN SEATING CO. 374
AMUSEMENT INDUSTRIES CO. 488
ASHCRAFT, C. S. MANUFACTURING CORP. 420
AUTOMATIC DEVICES CO. 488
BAKER ICE MACHINE CO., INC. 450
BALDOR ELECTRIC CO. 426
BAUSCH AND LOMB OPTICAL CO. 432
BRODSKY, DAVID E., ASSOCIATES 350
CENTURY LIGHTING, INC. 368, 369
CENTURY PROJECTOR CORP. 414, 415
CHRYSLER CORP. (AIRTEMP DIV.) 451
CLANCY, J. R., INC. 358
DAYTON SAFETY LADDER CO. 487
DAZIAN'S, INC. 355
DEVRY CORP. 416
DICTOGRAPH PRODUCTS CO., INC. 387
ELECTRIC-AIRE ENGINEERING CORP. 386
ESSANNAY ELECTRIC MANUFACTURING CO. 434
EXHIBITOR, THE 454
FEDERAL ELECTRIC PRODUCTS CO., (WILLIAM WURDACK ELECTRIC DIV.) 365
FLEXLUME SIGN CORP. 301
FOREST ELECTRONIC CO., INC. 421
FOREST MANUFACTURING CORP. 427
FRANKEL ASSOCIATES, INC. 356
FREMONT RUBBER CO. 311
GENERAL ELECTRIC CO., (LAMP DIV.) 483
GENERAL REGISTER CORP. 313
GOLDBERG BROTHERS 486
GOLDE MANUFACTURING CO. 485
GREAT WESTERN STAGE EQUIPMENT CO., INC. 359
GREIWE, INC. 351
HERTNER ELECTRIC CO., THE 428
HEWITT-ROBINS, INC., (HEWITT RUBBER DIV.) 373
HEYWOOD-WAKEFIELD CO., (THEATRE SEATING DIV.) 375
IDEAL SEATING CO. 376
INTERNATIONAL PROJECTOR CORP. 417
JOHNSON FARE BOX CO. 314
KARAGHEUSIAN, A. AND M., INC. 382
KNEISLEY ELECTRIC CO., THE 429
KNOXVILLE SCENIC STUDIOS 352
KOLLMORGEN OPTICAL CORP. 433
KROEHLER MANUFACTURING CO. 377
LEEDOM, THOMAS L., CO. 383
MAHARAM FABRIC CORP. 357
MCAULEY, J. E., MANUFACTURING CO. 422
MOHAWK CARPET MILLS, INC. 378, 379
MOTIOGRAPH, INC. 412, 413
NATIONAL CARBON CO., INC. 411
NATIONAL SUPER SERVICE CO., INC. 384

(Continued on next page)

(*Continued from preceding page*)

National Theatre Supply 446, 447
National Theatre Supply Export 477
Novelty Scenic Studios, Inc. 348, 349
Onan, D. W. and Sons, Inc. 372
Owens-Corning Fiberglas Corp. 360
Paramount Decorating Co. 353
Perey Turnstile Co., The 309
Perfo Mat and Rubber Co. 312
Poblocki and Sons 304, 305
Radio Corp. of America, (RCA International Div.) 479
Rau Studios, Inc. 354
Reliance Art Metal Co., The 308
Robin, J. E., Inc. 424, 425
Smith, Alexander and Sons Carpet Co. 380, 381
Spencer Turbine Co., The 385
Strong Electric Corp., The 423
Superior Electric Co., The 362, 363
Theatre Catalog (Back Issues) 388
Theatre Specialties, Inc. 306
Trumbull Electric Manufacturing Co. 366
Typhoon Air Conditioning Co., Inc. 452
United States Air Conditioning Corp. 453
Universal Corp. 307
Vallen, Inc. 361
Vocalite Screen Corp. 430
Voigt Co. 370, 371
Wagner Sign Service, Inc. 293, 294, 295, 296, 297, 298
Walker-American Corp. 431
Ward Leonard Electric Co. 367
Wenzel Projector Co. 418
Westinghouse Electric Corp., (Lamp Div.) 484
Westinghouse Electric Corp., (Sturtevant Div.) 448, 449
Westrex Corp. 481

FRONT *and* LOBBY

1948-49

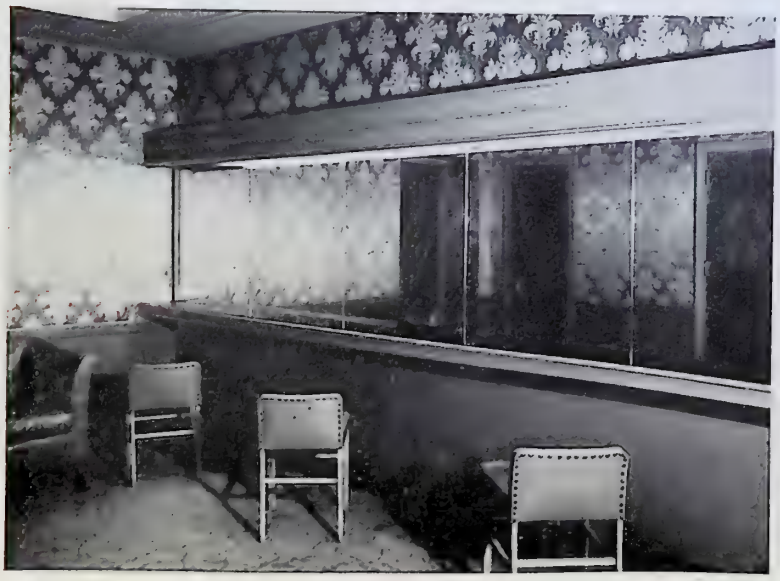
Glass for Construction and Decoration

A Review of the Versatile Possibilities and Trouble-Free Functional Values of This Theatrical Material

In a combined surge of energy and inspiration, glass manufacturers and research men are busy developing new types of glass and new applications of established types. This article discusses some outstanding developments and describes several specific installations. New usage is not confined to the theatre field. In fact, some of the installations described below appeared first in non-theatre locales but are included because of their innate interest and their probable effectiveness in the moving picture house. The wide variety of decorative and structural glass makes this material especially valuable in new building or remodeling. Adaptations of existing varieties are probably endless.

Glass, the material of a thousand and one uses, staggers the imagination with its infinite versatility and adaptability. In the theatre, where its multiplex possibilities have always been exploited to the hilt, glass is especially valued for its innate showmanship and its low-cost maintenance. Its beauty, usually enhanced by the skill of both designer and craftsman, is one of its outstanding characteristics. Its hard, abrasion-resistant surface resists scratching and marking. It is completely beyond the reach of corrosion; is unaffected by weather. It can be cleaned quickly with a damp cloth or with water (with or without small additions of wetting agents or suitable solvents) and a squeegee. In short, glass has many talents and special properties which make it an indispensable part of the theatre building of today. And in recent years, the structural and decorative functions of glass have been greatly extended as a result of many new developments in glass technology.



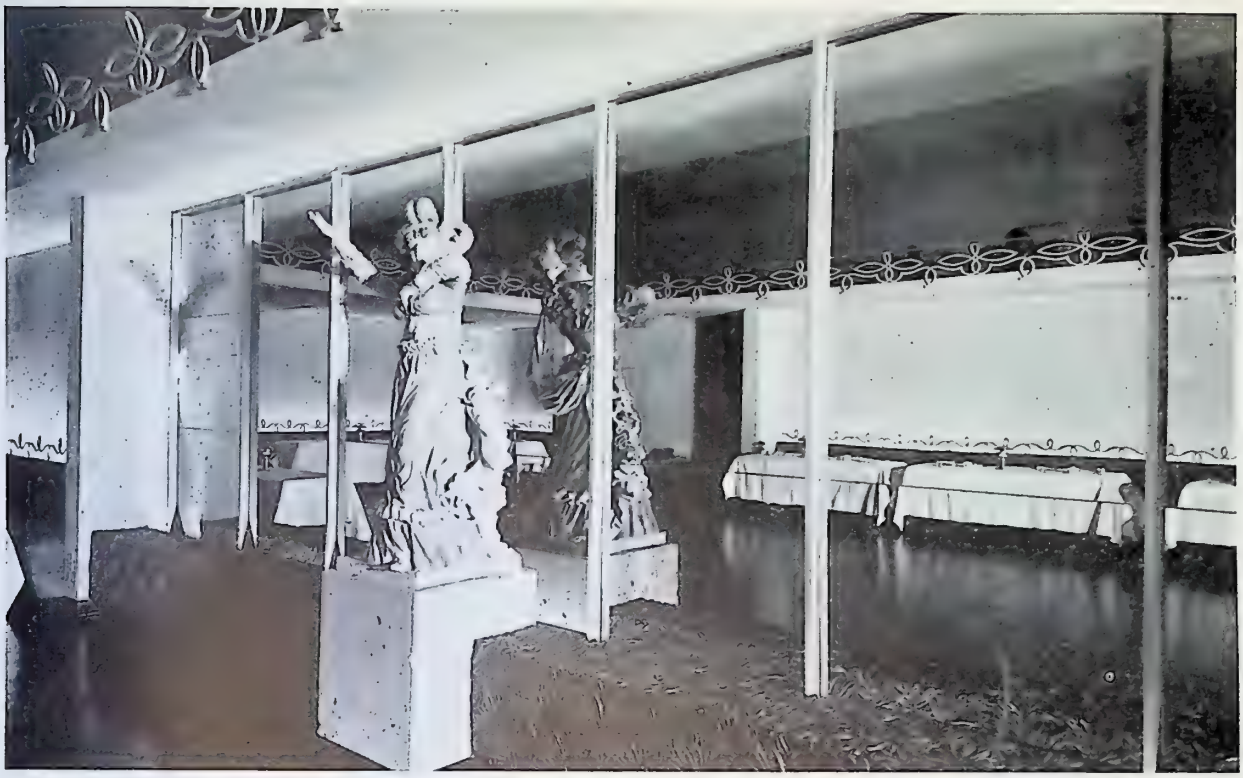


LARGE WALL MIRRORS provide an almost endless list of theatre adaptations. For the small lounge where an illusion of great spaciousness is desired, mirrors on opposite walls create an impression of width. In the photograph below, large mirrors on one wall of the lounge in the Yorktown, Cleveland, reflect the opposite wall and make the room seem large. *(Photos Courtesy of Libbey-Owens-Ford Glass Co.)*

Early Glass Decor

Just as glass is one of the most ancient of substances, with ancestral roots going back into the dim recesses of Egyptian history and before, so glass showmanship is nothing new. Many years before the original nickelodeon opened its doors to the first horde of fun-loving movie-goers, Edgar Allan Poe described a glass decor that even today should warm the cockles of any imaginative theatreman's heart.

The scene is the castle of Prince Prospero, wealthy playboy and, in his own peculiar way, patron of the arts. ". . . The apartments were so irregularly disposed that the vision embraced but little more than one at a time. There was a sharp turn at every twenty or thirty yards, and at each turn a novel effect. To the right and left, in the middle of each wall, a tall and narrow Gothic window looked out upon a closed corridor which pursued the windings of the suite. These windows were of stained glass whose color varied in accordance with the prevailing hue of the decorations of the chamber into which it opened. That at the eastern extremity was hung, for example, in blue—and vividly blue were its windows. The second chamber was purple in its ornaments and tapestries, and here the panes were purple. The third was green throughout, and so were



AN UNUSUAL MURAL EFFECT, that can be easily adapted to theatre lobbies, standee areas, lounges or other portions of the theatre, is here portrayed. Utilizing large, transparent mirrors, the above installation in the Ambassador East Hotel, Chicago, merely gains depth for a tastefully decorated dining room. When dining room lights are dimmed, and lights behind the transparent mirrors turned on, a second non-transparent mirror, only three feet behind the first, produces an endless vista of flowers or whatever other ornament may be between. *(Photos Courtesy of Libbey-Owens-Ford Glass Co.)*





FOR THE THEATRE INTERIOR glass blocks have a variety of uses. An inset of glass blocks blends itself into the decorative scheme. These blocks, which are translucent but not transparent, have been effective in cutting air conditioning costs through the elimination of windows. An otherwise darkened stairwell can be attractively highlighted by a glass block inset. They can also serve as barriers.



the casements. The fourth was furnished and lighted with orange—the fifth with white—the sixth with violet. The seventh apartment was closely shrouded in black velvet tapestries that hung all over the ceiling and down the walls, falling in heavy folds upon a carpet of the same material and hue. But in this chamber only, the color of the windows failed to correspond with the decorations. The panes here were scarlet—a deep blood color. Now in no one of the seven apartments was there any lamp or candelabrum, amid the profusion of golden ornaments that lay scattered to and fro or depended from the roof. There was no light of any kind emanating from lamp or candle within the suite of chambers. But in the corridors that followed the suite, there stood, opposite to each window, a heavy tripod, bearing a brazier of fire, that projected its rays through the tinted glass and so glaringly illumined the room. And thus were produced a multitude of gaudy and fantastic appearances. But in the western or black chamber the effect of the firelight that streamed upon the dark hangings through the blood-tinted panes was ghastly in the extreme and produced so wild a look upon the countenances of those who entered, that there were few of the company bold enough to set foot within its precincts at all."

What the Prince with his extreme artistic tastes would have worked out with the amazing variety of today's decorative and structural glass at his command is difficult to conjecture. However, for the theatre man planning to build or to modernize, the matter is considerably simplified, resolving itself into a well-considered selection of available materials.

Plate Glass Doors

At the theatre entrance, glass doors can give the house an aspect of hospitality, afford a clear view of the lobby, and invite the passersby to enjoy the entertainment within. Tuf-Flex plate glass is designed for exactly this use. In its manufacture it undergoes a special process of reheating and sudden cooling. As a result the outer surfaces are highly compressed, while the central portion is in tension, and this juxtaposition of forces produces a condition highly resistant to breakage.

Tuf-Flex is approximately 3 to 5 times stronger than plate glass in sustaining loads or resisting strain; 5 to 7 times more resistant to ordinary impact; and more than 3 times as resistant to thermal shock. In one drastic but dramatic test, molten lead was poured on a quarter-inch thick pane of Tuf-Flex resting on a cake of ice. This would have been curtains and the dustpan for ordinary plate glass. The Tuf-flex specimen was not visibly affected.

This remarkable glass will withstand bending stresses to such an extent that it can be twisted through an angle of 20 degrees or more without breaking. When its limit of resistance is reached, Tuf-Flex does not break like ordinary glass into jagged pieces but disintegrates into small crystals. However, in its superficial aspects it is like ordinary glass. It retains same appearance, clear-

ness and hardness, and coefficient of expansion as regular plate glass. Tuf-Flex is available in clear or colored grades.

Special plate glass can be used for both doors and stair rails. And any number of artistic combinations can be successfully incorporated in the theatre front with all-glass doors as the central ingredient. When transparent glass doors provide a view of the lobby, the extensive use of plate glass mirrors can suggest the feeling of spaciousness and brilliantly augment the lighting effect of marquee and vestibule.

Mirrors

Mirrors, in fact, have been standard equipment for a long time. Polished plate glass is now available for quality mirrors in lobby, lounge, and washroom; for the cashier's booth; and for any other location into which they can be artistically harmonized. Their judicious use is guaranteed to make any room appear much larger than it is. For lobby and washroom walls and facade, easy-to-clean and sanitary Vitrolite colorful glass facing is available.

If the theatreman is interested in unusual mural effects for his lobby, he should by all means investigate the recent installations of transparent mirrors in various public buildings. The Sarah Siddons Walk—named for the famous nineteenth century English actress—in the Ambassador East Hotel, Chicago, is a sterling example of the attractive art of aesthetic deception. Designed by Samuel Marx, the installation consists of a wall of mirrors three feet behind the first wall of transparent mirrors, accomplishing a remarkable and convincing illusion of distance, especially when combined with lighting effects and a floral and shrubbery arrangement. Concealed overhead lighting fixtures illuminate the miniature garden and the mirrored walls multiply its size to create the optical illusion of endless rows of flower beds stretching out to infinity. When it is not lighted from behind, the transparent mirror appears merely as a normal reflective surface.

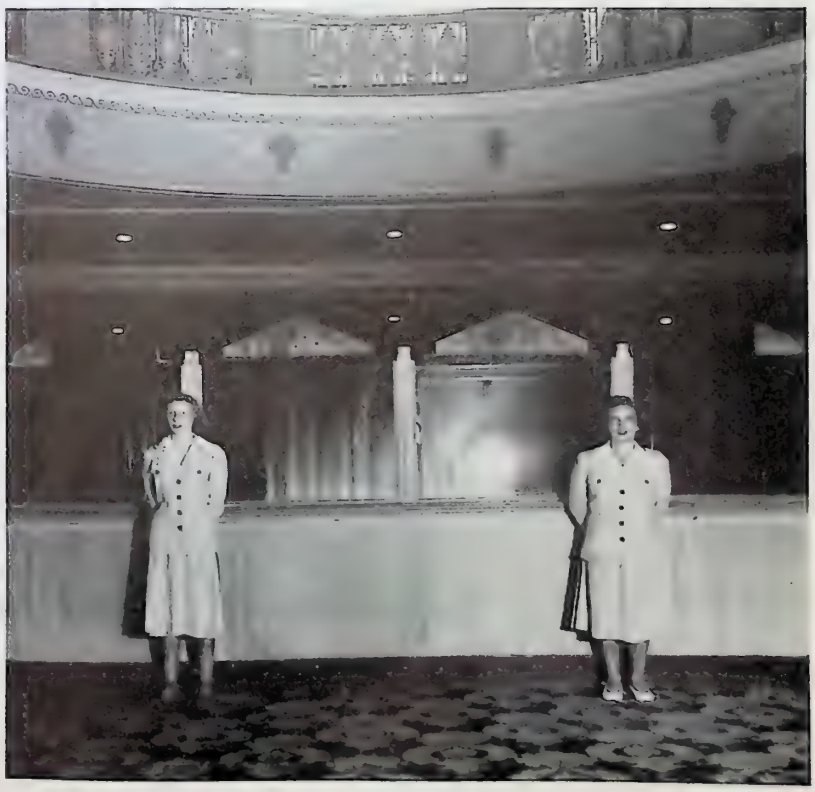
Glass Blocks

No discussion of structural and decorative glass utilization can very well omit mention of those revolutionary manifestations of our times — glass blocks. These dual purpose units are adaptable to either modern or traditional settings. Employed with imagination and taste, panels of them can create little islands of aesthetic warmth even in a bleak, barn-like structure. The charm of graceful stairwells is enhanced by this architectural ingredient; a corner is made more congenial by its translucence; and the facades of many theatres fairly sparkle with the magic blocks.

Glass blocks commend themselves not only as admirable sun and artificial light transfusers but also as compositions that combine strength (panels have a minimum crushing resistance of four to six hundred pounds per square inch), sturdiness, and an easily cleansed surface—with high insulating qualities. And, since they are hollow, outside noises are kept down and comfortable temperatures preserved.



AN INSET OF ETCHED GLASS, surrounded by reflective glass mirrors, in the wall of the outer lobby of the State, Jersey City, N. J., gives another example of the decorative uses of glass. The small panels have beveled edges for additional effect. Below, pyramids of etched glass attractively set off the top of the standee rail. These glass sections serve the double purpose of breaking noise and drafts.





AN EFFECTIVE USE OF GLASS BLOCKS sets off the name pylon and modern front of the Hiland. Adaptations of decorative glass for the theatre exterior are limitless. Panels set into otherwise plain walls of terra cotta, porcelain enamel, structural glass, cement or face brick, produce a sparkling modern and structurally excellent result. At the Lamar, Lamar, Colorado, a large panel breaks the monotony of the terra cotta blocks. Structural glass doors are also used with telling effect on this modern front.



The use of glass blocks for light transmission, in comparison with ordinary windows on the same basis, causes a reduction in heat gain, a factor of great significance in both seasonal and year-round air conditioning. Another interesting aspect of the product is that it rarely permits condensation on the room side of the block. This prevents the formation of water on window sills.

There are square blocks, corner blocks, and radial blocks ranging in size from five and three-quarters to seven and three-quarters inches. There are those designed with parallel flutes (utilitarian), with reeds (irregular effects), and with an asymmetric composition (decorative). The blocks are made at high temperatures with fused seals. The tight seals insure dry, dead-air spaces within the units. Hence, the blocks are relatively free of entrapped water vapor. Requiring no special skills or difficult techniques in installation, glass blocks seldom, if ever, require repairs or replacement.

Two popular incidental uses of glass blocks in theatres are in standee railings and candy stand counters. In the former adaptation, a panel of blocks frequently serves to denote aisle openings, at the extreme ends of railed sections. More often than not, these are lighted up in subdued colors.

Their employment as supports for candy stands is traditional. Here, too, the panels light up colorfully. The effect is almost convivial, certainly festive, and in keeping with the other gay trappings of the stand.

For many theatres throughout the land, glass blocks provide a modern touch with a minimum of complications. The comparative simplicity of their installation is in direct proportion to the unflagging effectiveness of their appeal.

Other Applications

Many of the most interesting applications of glass in both structural and decorative usage originate in fields outside the theatre proper. But because they illustrate the many artistic possibilities inherent in the material, and because they are easily adaptable to theatre design, these applications deserve attention.

For example, the imaginative use of glass in the giant liner, Queen Elizabeth, might at first glance seem utterly foreign to moving picture house decor. But perhaps the ocean liner and the theatre are not mutually exclusive in their dress. At least, the supposition is worth an investigation.

The Queen Elizabeth

On the Queen Elizabeth the wall surfacing of the large air conditioned cabin class lounge combines cloudy vellum hide, silver bronze and a special material made from spun glass laid between sheets and silvered in the back, serving to diffuse light through the room. In addition, the lounge has maps of the northern and southern hemispheres deeply engraved on molded glass.

Jan Juta, British artist, has decorated the forward bulkhead of the first class ballroom which is lined with quilted satin. A deep recess occurs in the center of the bulkhead and he has lined it with



ABOVE THE MARQUEE of the Don, Shreveport, Louisiana, is an extensive use of decorative translucent glass. Four pairs of Tuf-flex all-glass doors have also been included in the decorative scheme. The ticket booth has been glazed with bent plate glass to help complete this nearly all-glass exterior. The spacious entrance to Loew's Valentine Theatre, Toledo, Ohio, appears even more spacious because of the well planned use of Tuf-flex glass doors and mirrored lobby walls. Because of a large interior foyer, both the eight street doors and a similar number from the inner lobby require no light baffle and an open, luxurious effect is gained. These glass doors also provide limitless reflections. *(Photos Courtesy of Libbey-Owens-Ford Glass Co.)*



decorative glass showing monkeys, flowers and other jungle life scenes. The central portion of the ceiling in this room is lined with gold mirror and contains elaborate equipment for colored lighting effects.

Lighthouse lenses provide illumination and decoration for the first class movie theatre, while the dance floor in the veranda grill receives floodlighting from an illuminated decorative glass balustrade surrounding it. In the cabin class smoking room there is an extraordinary glass bas relief done by Norman Forest.

The cabin cocktail bar has illumination from curved lines of fluorescent lighting, and an illusion of sunshine at night is furnished by internal windows glazed with spun glass of pale yellow and laminated between sheets of clear glass. The two principal mirrors of the cabin dining room were etched by Margot Gilbert in summer and winter carnival designs, while a simple mirror treatment, framed in silver bronze has been applied to the hatch running through this restaurant. Glass was also effectively used in circular illuminated discs placed in floodlit bays, the brilliance of which compensates for the lack of sidelights in the room. The discs are etched in flower motifs and are outlined in light. Finally, the most prominent feature of the tourist winter garden is a large glass screen mullioned in silver bronze and etched with the "Birth of Life" by Ralph Gowan.

Photographic Glass

One of the more spectacular recent developments, while still in the laboratory stage, may be the rage of tomorrow. Yes, photogenic glass is a reality. To Corning Glass Works belongs the credit for pioneering this new glass. Specially treated, it can receive permanent colored photographic prints with three-dimensional effect and exceptional fidelity. Its photographic reproductions will not fade and are safe from any damage except breakage of the glass. Durability comes from the location of the print inside the glass and the fact that it often permeates the whole piece.

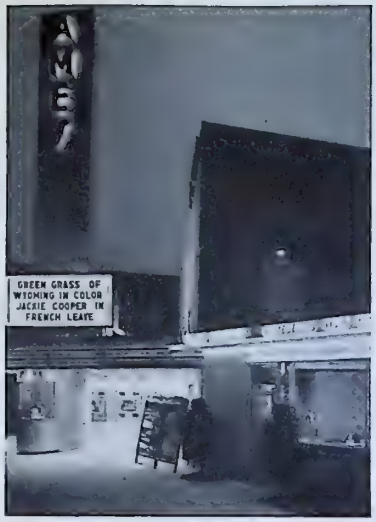
This photosensitive glass can be formed in any desired shape consistent with ordinary glass making. It may be reworked according to conventional glass practices prior to the photographic process without any deleterious effect. Physically, it can be tailor-made for almost any purpose and tempered to the desired strength. Reproduction of extremely fine detail is possible due to lack of grain in the design.

Of clear high quality, the glasses are available in several colors. One glass will reproduce in brilliant red. Another permits pictures in blue, purple, ruby, or orange, while a third type prints in yellow or brown. The shade of any particular color is determined by the length of exposure.

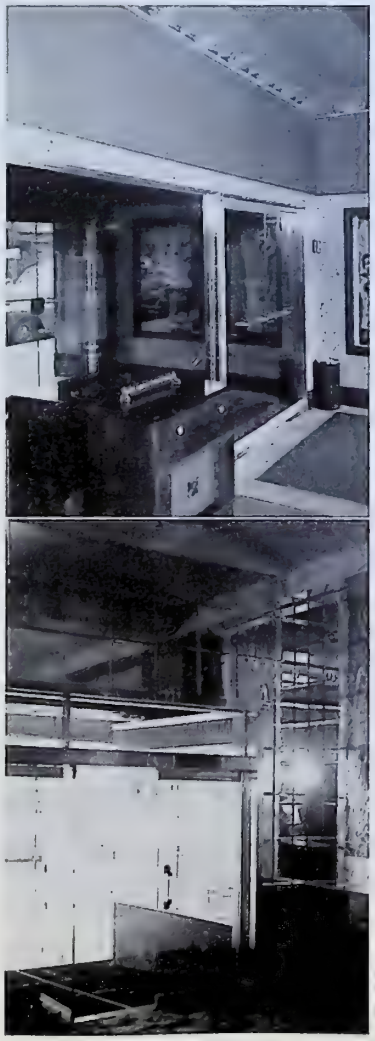
The three-dimensional effect possible with this glass comes from the fact that shadowed areas penetrate farther into the glass than highlight areas. Unusual lighting effects can be obtained by placing a light behind the glass.

Corning has also developed photosensitive opal glasses whose myriad microscopic transparent particles scatter light in different directions. Colors possible in this medium are: white, red, blue, yellow, or brown; and combinations of these colors. The opal and transparent glasses can be combined to make designs side by side or superimposed so that the opalescent glass forms a background for a transparent colored surface image.

Some of the many potential uses include: portrait photographs, scenic photographs, window photo-murals, decorative tile, illuminated advertising displays. To these few obvious suggestions, the fertile mind of the practicing theatre architect will undoubtedly add an imposing list and, when this specialized glass becomes available on a commercial scale, find a host of applications for the material in the theatre where it so naturally belongs.



THIS BENT-GLASS TICKET BOOTH was a design feature by Architect Lewis C. Alexander. Fixed-glass panels can be installed between all-glass doors. Framing with beveled mirror blocks is effective around an etched glass panel.



Quasi-Marble

On the functional side, the Appleman Art Glass Works has announced the development of a new structural glass called Murapane. The colors and designs embedded in this material afford an authentic reproduction of marble and alabaster, with the underlying pattern resembling the natural formation of alabaster, onyx, and other marbles. Murapane is one-quarter inch thick as compared to one inch thickness of bonafide marble slabs. And, unlike marble, Murapane is available on specification to almost any size. It is finished with the high lustre of polished marble and is durable and impervious to weather. Its cost is a fraction of that of marble.

Huge columns and walls of Murapane are to be used on 64,800 square feet of surfacing in the United Nations Secretariat in New York. The United Nations architects have selected Murapane in medium blue Temprex.

Living Walls

Another practical functional glass material manufactured by the Appleman Art Glass Company consists of a series of knock-down glass partitions and picture windows. "Temprex Livingwall" is a combination of die cast aluminum frame sections, 20" square and 3⅞" deep, faced with tempered Temprex glass 7/32" thick and 19½" square. One of the panes is permanently sealed in the frame at the factory, providing a tough joint. The other pane is fitted for easy removal.

The glass, which was developed during the war, is tough. It can support almost five times as much weight as ordinary glass, has a high resistance to impact—said to be seven times greater than that of ordinary glass.

The "Livingwalls" are essentially stiff, self-supporting units which can be assembled without the use of any cementing agent. Simple, interlocking devices, an integral part of the frame structure, join blocks together both horizontally and vertically. Since they lock together mechanically, the self-supporting blocks can be demounted easily.

The "Livingwalls" are susceptible to artistic treatment, too. Colors and patterns can be fired on the hard surface and in one of the more spectacular uses of the panels, electrical outlets are installed in the cavity between the two panes. When the wired wall is used as a







partition between two rooms, it illuminates both, of course. In short, it is a glass wall which both originates and transmits light.

Glass Is Valuable

Historically, glass is well-pedigreed, boasting a long and honorable ancestry dating from beginnings which even now are lost in the haze of time. In the years, 2000 to 1500 B.C., an important glass industry developed in Egypt; and a complete glass factory was in operation at Tell-el-Amarna in 1370 B.C. In Britain; remains of glass furnaces of the Roman period found near Warrington offer mute proof of the glass industry's venerable age. Later, Renaissance Venice taught most of Europe the fine art of glass-making and it is entirely possible that glass houses (for people who shouldn't throw stones) came into vogue during this period of enlightenment.

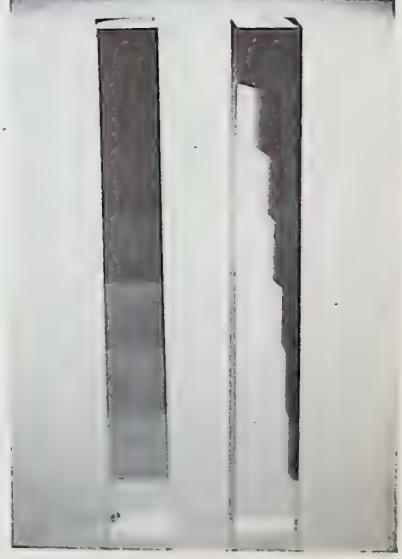
Even today, many years after the events chronicled in the last paragraph, glass is still holding its own among the traditional materials—wood, iron, steel, copper, brick—and the late arrivals—plastics, plywood, aluminum and magnesium. Because it combines structural values and aesthetic decor so naturally and so completely, glass remains the inevitable choice of the builder and architect, planning a new theatre or remodeling an existing house. With glass, the desired qualities of art, beauty, transparency, lightness and general **joie de vivre** can be built into the theatre as an integral part of the structural scheme.

In the brief survey of modern glass given in this article, it has been possible to give only a few highlights of a very extensive field. Those readers who would like further details are referred to current technical literature and the national trade journal advertisements of the manufacturers of structural and decorative glass.

TO THE LEFT are several views of the S. S. Queen Elizabeth, biggest ocean liner of them all, which makes wide use of glass in many forms thruout its functional and decorative plan. At top is the First-Class Verandah Grill where a liberal use of etched glass panels highlights the smart, modern look. Center is the Cabin-Class Cocktail Bar where strong window units replace portholes and a judicious use of mirrors provides a spacious effect to a long and rather narrow,—although beautifully appointed,—room. Bottom is a view of the Cabin-Class Restaurant where once again etched glass panels and large mirrored surfaces create an illusion of still greater width.







TO THE RIGHT is a new use of glass that promises much for the future. Photosensitive glass is a recent development of the Corning Glass Works about which much will be heard. Not just a picture on a glass surface, the color pigment and outline of a photograph on it permeates the entire glass thickness to any desired depth. Because it is possible to bend, etch, and process such glass in any manner common to ordinary glasses, its future as a theatre product is only dependent on the imagination of theatre designers and decorators. It is easy to imagine vast murals or wall insets, lighted from the rear through shadow boxes, that will glow as points of accent in the decorative scheme. Top right is a current Bradford Bachrach picture processed in photosensitive glass. Below it Dr. Thomas Stookey examines a negative and a piece of photosensitive glass prior to inserting them in the printing frame. And bottom, an example of how the color and depth of the picture vary with exposure time. In head-on and side views are two bars of glass that have had seven exposures of different lengths.

The New Patented Inner-service Marquee

A Specially Designed Room and New Light Source Provides Working Space, Storage and Efficiency

By Ben B. Poblocki
Poblocki and Sons, Milwaukee, Wisconsin

In contrast to many non-commercial buildings in which immense volumes of empty space play a definite role in establishing the aesthetic motif, the moving picture theatre never completely subordinates its functional principles to its decorative scheme. Where the metropolitan depot of a great railroad would induce a feeling of grandeur by the psychological use of a fantastically high roof almost lost to the eye, the theatre with the same vertical dimension to play with would almost certainly introduce multiple balconies for the more efficient accommodation of its clientele. The theatre does not neglect the aesthetics of architecture; however, if practical, it strives to make the beautiful also useful.

Sometimes the result is astounding in its logic. A case in point is our new patented hollow marquee designed and developed by Poblocki and Son, Inc. By placing a work room inside the marquee, we have given the theatre world a valuable new concept that will undoubtedly exercise a far-reaching influence on the design of the theatre front. In this article, the new marquee is described and some of its many advantages enumerated. Safety, economy and efficiency stand out prominently in this list. Theatre men thinking specifically of the marquee and its vital function of selling the show can evaluate this new version according to their own requirements.

Weaknesses of Current Design

For the past two decades there has been a growing realization in the theatre world that eventually a new kind of marquee or a basic metamorphosis in the theory of marquee design would take its rightful place in theatre architecture. Marquees now in general use are in many instances skillfully planned and artistically wrought—handsome products of the theatre craftsman's workshop. But, while they represent constant improvements and advances in design and efficiency, they have not completely fulfilled their functional potential nor completely satisfied all the exacting requirements of theatre owners.

Maintenance continues to be a costly problem: attraction board changes are slow, inconvenient, and at times even dangerous; the use of many small lamps is costly—both in electrical current and lamp replacement; changeable letters, lamps, and cleaning materials must be stored at a distance from the marquee, and this naturally consumes time whenever a new show must be announced, or luster has to be restored by the old-fashioned expedient of cleaning. In short, present marquees are well built and beautifully designed; however, they do exhibit some disadvantages and would benefit by technological improvements.

A New Concept

With the completion of the Fox Garfield marquee in Milwaukee, and Capital, Manitowoc, Wisconsin, a new concept of marquee design and utilization will usher in a new era in this phase of theatre tectonics. For theatre owners this new concept when fully realized in general usage will minimize or eliminate most of the disadvantages stemming from the conventional marquee. For theatre builders, the new source of space which the Fox Garfield marquee makes available will be a godsend.

The basic problems of changing letters and lamps, and cleaning attraction signs were solved by Poblocki & Sons, Inc., by the often discussed expedient of converting the marquee into a room. Access to the inside of the marquee is gained through a door installed in the front theatre wall. In a new theatre, this door can be incorporated in the plans. If such a door is not always possible in a remodeling job, a scuttle hole can be placed in the roof of the marquee or a door in the marquee soffit.

More difficult to plan and develop was the manner in which the sign servicing could be accomplished from this room. New equipment and new methods had to be created. Attraction boards were split up into window type panels. These panels, by sliding up and down like a window, allowed letter changing from the inside, as well as bulb replacement in flasher signs. If desired, the panels could be hinged to open like a door. The attraction sign lights needed to be placed three feet or more away from the glass so that a man could easily stand in front of them and make any needed changes. The advantages of working from inside the marquee will be obvious to all theatre men.

Among the potential future developments of the theatre building that farsighted theatre architects of past years promised to the industry, were marquee signs that could be serviced from the inside and without the problems and hazards of wind, weather, and pedestrians. Over eight years ago, in a specially prepared survey on Page 194 of the 1941 Edition of THEATRE CATALOG, the celebrated theatre specialist from Pittsburgh, Victor A. Rigaumont, wrote of such a plan and pictured the recently opened Harris-Manos Theatre in Jeanette, Pa., where he had designed such a marquee storage room, even though service was from an exterior parapet.

The new Poblocki marquee, Patent #2114639, seems to be the ultimate development of this basic theme. The room and storage bins with access to the theatre interior are the same; but by a cleverly engineered window and lighting arrangement, and by a development of the idea into animation and additional advertising areas, the complete fulfillment of its potentials now seems possible.

Lower Operating Costs

Operating costs are greatly reduced, too, with the new Poblocki marquee. Present marquees utilize 40-watt lamps placed four inches apart against a relatively inefficient white painted background to reflect part of the spillage in order to produce a uniformly bright attraction sign. Thus, an attraction sign 18 feet long and four letter lines high, requires 216 lamps and utilizes 8640 watts. The new marquee for the same area utilizes only 12 200-watt lamps in Holophane reflectors to direct a maximum of light through the sign board with the use of only 2400 watts. Since wattage is a measure of electrical current consumption rather than brightness, this means a saving of 72% in current alone. The saving in lamp cost is believed to be even greater.

The use of Holophane reflectors as in the Fox Garfield was adopted after many experiments with a variety of sizes and types. The Holophane is an industrial type, all glass, prismatic reflector which gives even distribution of light over the entire attraction board face without hot spots. There is no silver to chip, tarnish or dull and since the inside of the reflector is perfectly smooth, it is easily wiped for maximum reflector value.

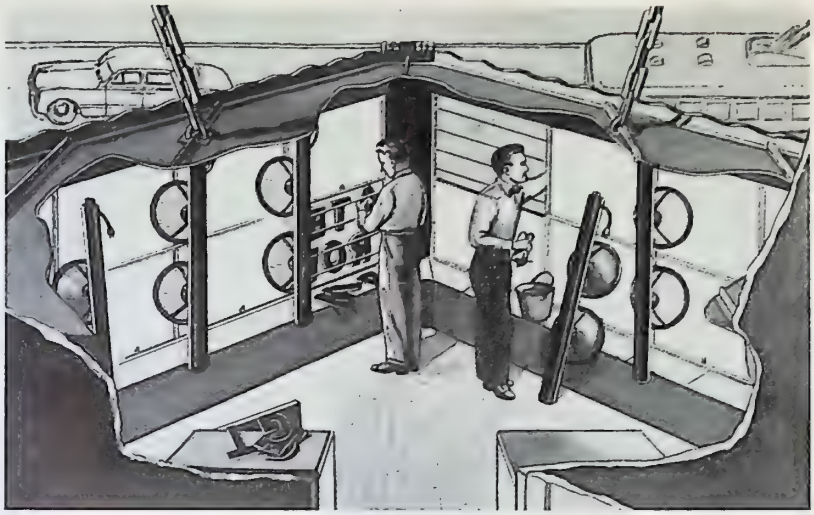
The lamps and reflectors are mounted on a metal channel, two or three lamps to each channel, and this is suspended from the marquee room ceiling. Each channel carries a plug, similar to the one used on household lamps and appliances, and can be taken down at any time if additional working space is desired, or for the use of a stereopticon or projection machine. Socket channels are mounted to the underside of the ceiling. Neither the weight of the socket bar nor that of the reflectors is borne by the electrical connections.

The Holophane reflectors carry a metal ring around their facing edge to minimize the danger of breaking or chipping, a hazard existing in marquee territory because of concentration of let-

ters, brushes and other equipment necessary for marquee work. Three bars, attached to three sides of the reflector ring, bolt to the channel, thus carrying the entire weight of reflector, bulb, and socket.

Maintenance Efficiency

With the conventional attraction boards, it is necessary to remove individual panels or frames for washing. In northern latitudes through six months of the year, this entails carrying the frames down a ladder and into the lobby to do a thorough job. The time involved in this laborious ritual prohibits many theatre owners from keeping their attraction boards at top efficiency. With the new Poblocki marquee, however, cleaning of attraction boards and lamps is carried out in only ten per cent of the time sometimes required. The work is done from the inside and, therefore, in any weather, clement or inclement.



AN ISOMETRIC DRAWING of the Poblocki inner-room marquee, above, shows the many advantages of this design over the old style. Men, working within the marquee itself, have no weather problems as they simply remove the window-type glass panels and rearrange letters to announce the next attraction.



TO THE LEFT may be seen the new concept of a worker changing a silhouette letter with complete ease. Just as easily, a second workman gathers letters from a storage cabinet in the marquee.

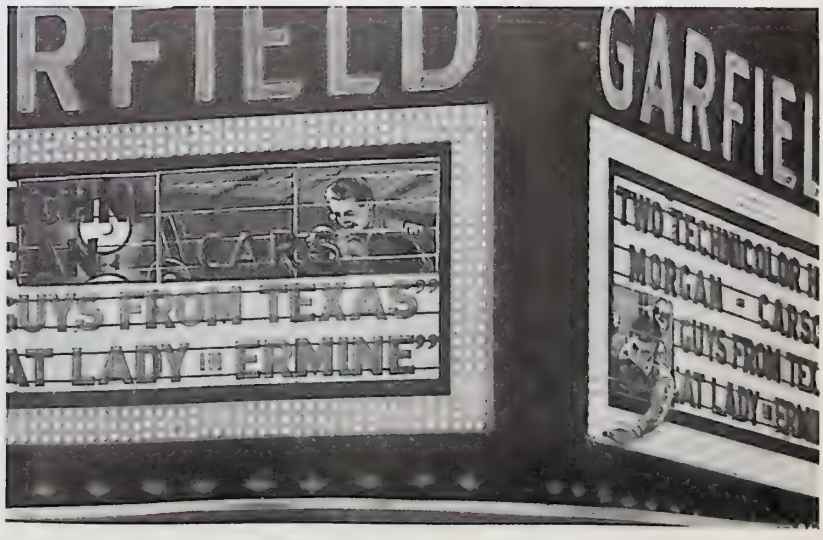
Because all electrical equipment, such as flasher, sockets, wiring, and other components, remains within the marquee, the wear and tear on such equipment is substantially less than if it were exposed to sunlight, temperature changes, outdoor humidity, storms, ice, sleet, snow, frost, or the defecations of wanton birds. Any repairs that are necessary can be made in a minimum of time because of the easy accessibility of the equipment. In addition, ambient heat from the lamps in operation is sufficient to keep the room warm, reduce humidity, melt snow on the roof of the marquee, and keep the drain from freezing, to mention but a few of the benefits which attend this additional source of warmth.

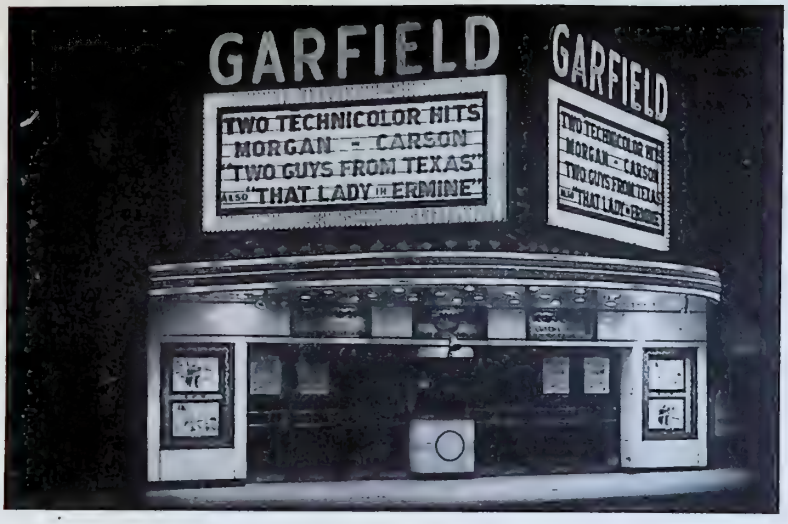
Hazards Minimized

Since letters are placed in position by men working within the new marquee, the use of exterior ladders is largely limited to the under-marquee area or other signs not reachable from the inside. This fact will come as good news to those theatres where the marquee extends to the street and changing letters might mean blocking off or impeding foot traffic, possibly automobile traffic. And maintenance men who worry about icy or wet sidewalks will find secure haven in the room within the marquee.

Storage space for plastic or aluminum letters is provided within an arm's reach of the letter lines. Some methods make

A VIEW OF THE NEW MARQUEE may be seen in the drawing below as two men are placing letters for the next attraction. Note the ample working space when glass panels are removed.





ABOVE IS A COMPLETED INSTALLATION of the new Poblocki marquee on the Fox-Garfield, Milwaukee, Wisconsin. Height is gained by this design, rather than lost, and the fact that a room is hidden behind the attractive sign is far from obvious. This particular installation is a Poblocki "A" design.

it necessary for the letters to be laid out on the sidewalk while just a few of the entire collection are being hung in place. A fairly high incidence of breakage results from this practice; a hazard almost completely eliminated by storage of letters inside the new marquee. In addition, lamps are conveniently located for replacement; and cleaning materials are always available within arm's reach.

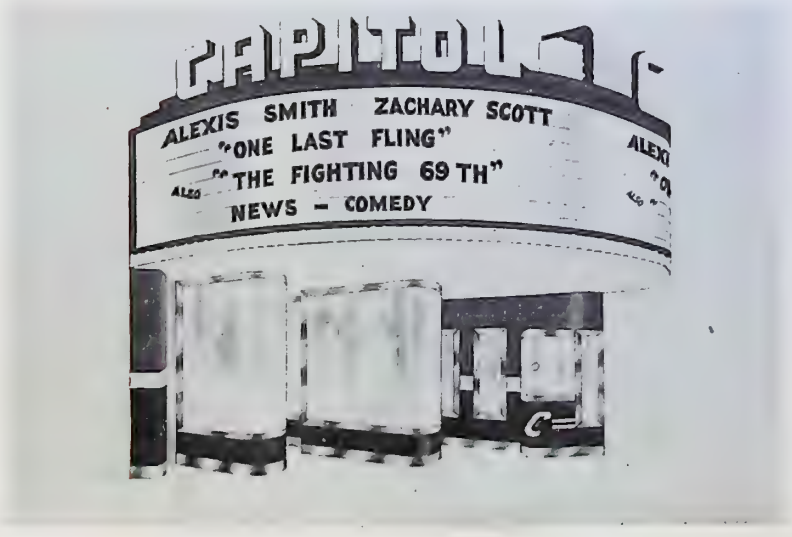
New Advertising Effects

All these features give this marquee an outstanding performance value. However, the new attraction effects which may be used with it make the Poblocki marquee an extremely effective medium of on-the-spot publicity. There are two kinds of effects now possible—more will probably be developed.

A color changer can be installed within the marquee, enabling the operator to change the overall color of the attraction boards, according to season, type of picture, or program. A motor driven color wheel can be utilized to transmit various colors through the sign, producing an animated effect that will undoubtedly double the attraction value of the marquee.

Still more arresting is the use of a new type stereopticon machine which can be used to project a life-sized actor, in conjunction with his name and part in the picture—stationary or in motion—on one section of the attraction board.

IN MANITOWOC, WISCONSIN, a second inner-room marquee is scheduled to be installed on the Capitol. This installation will be a round type rather than a point. Below is a rendering.



Trailers of coming attractions can also be run, duplicating those on the indoor screen. Or a trailer of the current attraction might be flashed on a marquee section a few minutes before the feature picture begins. Thus, the compelling psychology of motion greatly augments the attraction of light and color that already provides so much appeal.

Conclusion

The Fox Garfield Theatre, Milwaukee, Wisconsin, is the first house to utilize the new marquee in an "A" type design. The second installation—a round type marquee — is the Capitol Theatre in Manitowoc, Wisconsin. These will be followed by others, especially in locations eager to take advantage of all new developments in theatre design and architecture. The basic idea of the Poblocki marquee is a good one, in fact, a highly efficient one which recommends itself to every theatre owner considering building a new house or remodeling an old one.

AT THE RIGHT, top, should workmen use a straight ladder it could prove hazardous to letters, workmen, patron, and pedestrian. Small incandescent bulbs are claimed to be less efficient.



WAGNER SIGN SERVICE, INC.

Presents

THE LARGEST LINE *of Quality* MARQUEE DISPLAY EQUIPMENT *in the World*

Designed for powerful attention value and effective selling

Your front and marquee are worth a lot of money to you if used properly. Cash in on them!

Focus interest upon your theatre . . . compel attention to your offering . . . outsell your competition . . . build your grosses by billing every attraction as a big event.

If you want to put these forces to work for you and don't know how or where to begin, we will be glad to extend to you our complete planning service. Forward a photograph or rough layout of your front, and marquee, if you have one, and we will offer our recommendations.

- GIANT WINDOW-TYPE FRAMES
- MASTER MULTIPLE MOUNTING FRAMES
- COLORED TRANSLUCENT PLASTIC LETTERS
- ALUMINUM SILHOUETTE COVE LETTERS
- LOBBY DISPLAY UNITS
- COLORED PHOTOGRAPHIC TRANSPARENCIES
- LETTER MOUNTING STRIPS
- FLEX-WORD UNITS
- RAILOCK & COLORLITE LETTERS

FREE catalog on all Wagner products sent on request

Wagner Sign Service, Inc.

218 S. Hoyne Avenue
CHICAGO 12, ILL.

Name and address of your nearest Wagner theatre supply dealer or sign shop sent on request

WAGNER STAINLESS STEEL FRAME AND GLASS UNITS

WAGNER MASTER MULTIPLE FRAMES

Wagner Master Multiple Frames employ a series of stainless steel bars spaced on 7" centers, and accommodate any and all sizes of Wagner letters, since these letters are slotted with uniform spacing.

(An exclusive patented feature.)

"39" AND "41" MODELS RECOMMENDED FOR OPENINGS UP TO, AND INCLUDING 43"

In the "39" type the frame inserts in a channel at top and bottom. It has no drain flange.
In the "41" type the frame inserts in a ¾" wide by 1½" deep channel at top and has a drain flange which sets over rail at bottom.



WAGNER WINDOW-TYPE FRAME AND GLASS UNITS

(Patent Pending)

The only marquee frame which affords openings and billing space of any height or length in ONE panel, making it unnecessary to join together a series of small signs. Accommodates the smallest to the largest letters and life-size photo transparencies. The frames are installed separately and before the glass. Lamps, neon and glass can be removed, cleaned and replaced without removing the frames. No shopwork necessary in the event of glass breakage.

All parts of the sign may be serviced through open windows. Lamps are replaced as easily as though they were exposed. These frames within two years will accordingly pay for themselves by elimination of maintenance costs necessary with any other large multiple type frame of four rows of ten-inch letters or over.

HERE'S HOW THEY WORK!

1. *The maintenance man raises a window to gain access to the inside of the sign.*



2. *The window is held open by a small hook. Both hands are free to work inside the sign.*



3. *This is a rear view of one window panel. All panels, except the top one, slide in narrow guide channels, placed at such an angle that each glass slides behind the one above. The glass may be removed by simply raising the panel above the top of the channels.*



4. *This is a rear view of the top panel. Note the short channels at top and bottom. By simply raising this panel above the bottom channel and bringing it down inside the sign the glass may be removed.*



Wagner Sign Service, Inc.
218 S. Hoyne Avenue
CHICAGO 12, ILL.

WAGNER SLOTTED TRANSLUCENT COLORED PLASTIC CHANGEABLE LETTERS*

FOR EFFECTIVE SHOW SELLING

Wagner Multi-Size Translucent Colored Plastic Changeable Letters are the modern means of attracting attention and business.

They afford a vivid, colorful display—impossible with other letters. Gorgeously brilliant when light shines through them, they also assume sharply silhouetted third dimensional effect by day.

Now 60% stronger, Wagner Plastic Letters are shock-proof . . . practically unbreakable!

THEY MORE THAN DOUBLE THE EFFECTIVENESS OF YOUR SIGN

*Slotted letters are patented and available exclusively from Wagner. Patent 2048040 (adjudicated) and many other patents. Wagner's exclusive patented slotted method of mounting prevents freezing to the sign. With more than six times the bearing surface of the lug type letter, Wagner slotted letters assure complete safety.

The Wagner exclusive mounting method furthermore permits adjusting the grip of the letters for any fit, from hurricane-proof (so that letters cannot blow together or off the sign) to easy sliding letters that can be moved with a stick.

Available in 4″, 8″, 10″ and 17″ sizes in red, green, and blue, and 4″, 8″ and 10″ sizes in amber.

The gorgeous, non-fading, jewel-like colors go all the way through the letters, hence cannot chip or scale. Furthermore, these strong durable letters never require painting or other maintenance.



Wagner Sign Service, Inc.
218 S. Hoyne Avenue
CHICAGO 12, ILL.

WAGNER SLOTTED ALUMINUM LETTERS

30 - 24 - 16 - 12 - 10 - 8 - 6 AND 4 INCHES

USE ONE OR ALL SIZES

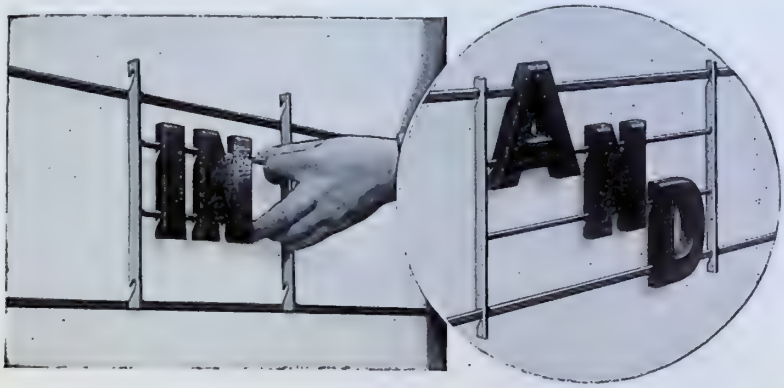
All sizes of Wagner Aluminum Letters are slotted with uniform spacing so that ANY and ALL sizes can be used in the Wagner Multiple Frame. This is an exclusive patented feature.





Wagner Aluminum Letters are available in a wide variety of colors, finishes and styles of type and in more sizes than offered by any other line. Solid Color Cove Letters are made in 4", 8", 10", 12", 16", 24" and 30" sizes. Colored or Aluminum Cove Edge Letters are made in 4", 8", 10", 12", 16", 24" and 30" sizes. Gothic Letters are made in 6", 8", 10" and 12" sizes, and Poster Letters are made in 8" and 10" sizes.

WAGNER FLEX-WORD UNITS



These miniature frames mount on standard Wagner frames of 7-inch bar spacing and provide for the easy forming of units of less important words with 4-inch letters. They save space, permit better use of space and make word-plates unnecessary.

Flex-Word Units are extremely flexible. The 4-inch letters can be staggered in three lines, or two straight lines can be used in a space that ordinarily accommodates one row of 10" letters, as shown in the illustration. Flex-Word Frames are available for either straight or curved attraction boards. Two or more Flex-Word Frames can be butted together to handle long words. Properly spaced, 4-inch letters require approximately four inches of horizontal space per letter.

Wagner Flex-Word Frames are available in horizontal lengths of 8, 12, 16, 20 and 24 inches.

Wagner Sign Service, Inc.
218 S. Hoyne Avenue
CHICAGO 12, ILL.

WAGNER TRANSPARENCIES AND TRANSPARENCY FRAMES

Designed to inject the compelling power of colored photographic realism in marquee displays on current showings and to advantageously exploit coming attractions in lobbies.

These brilliant, full-colored transparencies can be made of any star or scene desired and in any size up to life-size and larger to fit Wagner Transparency Frames, which in turn fit any Wagner Master Multiple Frame, the same as letters.



Shadow boxes are available to fit any transparency frame or may be made by your sign man. Specifications will be furnished on request and without obligation.

Wagner Transparency Frames are available in size 21-¾″ x 25-¾″ to accommodate 21″ x 25″ transparencies and in size 30¾″ x 40¾″ to accommodate 30″ x 40″ transparencies. Larger sizes on special order.

WAGNER LOBBY DISPLAY UNITS

An effective medium for selling *coming attractions.*

Made of sheet steel, with attractive white enamel finish. Easy to install.

Made in standard sections 24″, 36″ and 48″, which can be combined to make up any desired length. Each unit is 7″ high, with two sockets per lineal foot.

Wagner Slotted Plastic Letters are mounted on the bars in the middle, or firmly held in "standee" position at the top, or suspended from the bottom by clips.

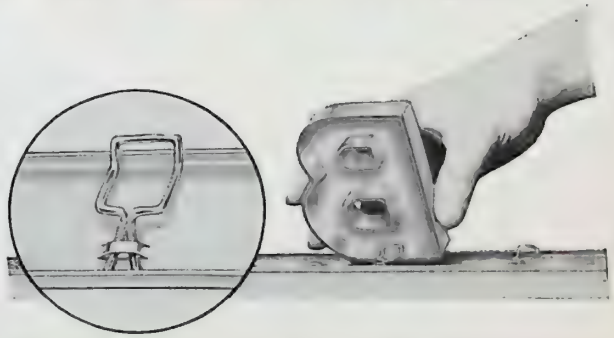


WAGNER MOUNTING STRIP FOR PLASTIC LETTERS

Wagner Transparent Plastic Colored Letters are easily adaptable to any arrangement or conditions within the theatre by using stainless steel mounting strips designed for this flexible use.

These letters occupy such small space that they can be set up on ledges, and many other places where no other display equipment could possibly be used. No special wiring is necessary and no alterations are required.

Drilled for mounting with nails or screws onto any cove, sill or other wood foundation, these mounting strips can be placed on top of a wood surface and the letters mounted in the "standee" position, or the strips can be fastened on the under side of a wood surface and the letters used in suspended position.



In determining the lengths of mounting strip needed for any number of letters, estimate as follows: for 4-inch letters, allow 4 inches of space on the mounting strip for each letter, which permits proper spacing. Allow 4 inches of space between words. For 10-inch letters, allow 10 inches of space on the strip for each letter, and 10 inches of space between words.

Mounting strips come complete, including necessary attached clips for holding letters in position, drilled and ready for installation.

Wagner Sign Service, Inc.
218 S. Hoyne Avenue
CHICAGO 12, ILL.

SELL EVERY PICTURE AS A BIG SHOW!

YOUR ATTRACTION BOARD IS YOUR *Best* ADVERTISING MEDIUM!

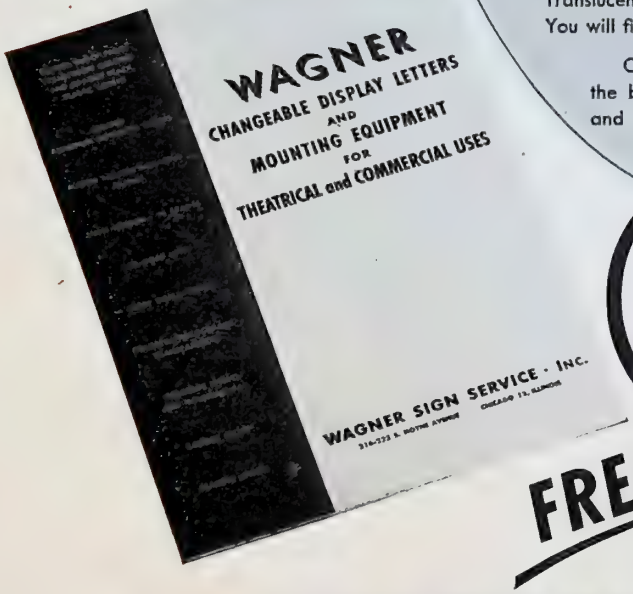
MAKE PROPER USE OF IT!

AVOID THE EYE-MONOTONY OF ONE-SIZE LETTER COPY

With all the sizes, styles and colors available in Wagner Multi-Size Letters it is easy to arrange a display that is attractive, interesting, effective!

If you have only aluminum letters now, obtain enough Wagner Translucent Colored Plastic Letters to use both kinds in combination. You will find that they work wonders in attracting attention.

Changing copy is simple BUT it deserves the attention of the best man in your organization. He alone should write and lay out your copy and check it for proper installation.



USE WAGNER SCALED RUBBER STAMPS & LAYOUT SHEETS

•

WAGNER PRODUCTS ARE SOLD BY RELIABLE THEATRE SUPPLY DEALERS AND MARQUEE MANUFACTURERS IN YOUR TERRITORY.

FREE! Write today for your copy of this big catalog of effective show-selling equipment.

Wagner Sign Service, Inc.
218 S. Hoyne Avenue
CHICAGO 12, ILL.

Plastic-Finished Paneling in Theatre Decor

New Materials Provide Economical Means of Creating Attractive and Practical Interiors

By Simon A. Kinsey
Installation Engineer, Marsh Wall Products, Inc.

The use of plastic-finished wall and ceiling paneling as an economical and effective means of creating theatre interiors of outstanding beauty and practicality has gained considerable favor, in recent years, among alert theatre operators and owners. With the introduction of a premium quality pre-decorated wallboard in a wide range of colors and patterns, a new material is now available that is easily and quickly installed, can be adapted to any architectural or structural requirements and will resist the wear and tear of public usage, with a minimum of maintenance, time and expense.

Premium Quality Paneling

Because of the abuse to which any interior material is subjected when installed in any public building, we refer, in this article, only to the best quality, factory-finished wall and ceiling panels. Typical of this class of product is the hard, yet flexible surface which has been permanently integrated with a tempered presdwood base. The surface of such premium-quality wallboard is high-heat-baked, a process which fixes the colors permanently and seals the surface against dirt, grime, moisture and grease, as well as mild acids, alkalies and stains.

Colors and Patterns

There are many features of premium quality pre-finished panels which recommend their use by theatre operators. To take these features in their logical order, we should start first with colors and patterns. The modern theatre employs a wider range of architectural design and decorative treatment than any other type of building. Because of this, many materials which might otherwise meet the specialized requirements of this field are not well suited for use in theatres. The new wallboard, however, which is available in many colors and patterns and usually in at least two finishes, permits the broadest sort of application.

Unlimited Applications

Where to use premium-quality wall and ceiling paneling in the theatre is an easy question to answer. Almost without exception, the answer is: everywhere —in any room where colorful, sanitary interiors are desired. In checking over the various patterns and colors of paneling available for theatre interior use, we find that lobbies, foyers, auditorium, smoking rooms, lounges, rest rooms, candy counters, and offices all benefit through the use of this modern method of creating distinctive, practical interiors. There are gleaming, brilliant colors available for creating outstanding, individual color schemes in lounges and rest rooms; sparkling white or eggshell colors for toilet rooms. For auditoriums and offices, there is practically no limit to the choices available, ranging from brilliant colors, in high-gloss or semi-gloss finishes, to warm, luxurious wood grains and impressive marble patterns.

Installation

Installation, a particularly annoying problem in modernization programs, is facilitated by wallboard. Because it can be easily and quickly installed over any clean, dry surface, it greatly simplifies decorating work, on new buildings or old. The better wallboards, most of which are packaged in wall-size sheets, are easy to cut and fit, usually requiring only regular carpenter's tools for the complete job. They can be installed around curves, fitted to irregularly-shaped rooms and used in many other ways to simplify finishing of distinctive interiors. Maintenance crews can install this material in a few hours, with no interruption of business. As a rule, complete installation instructions accompany each shipment.

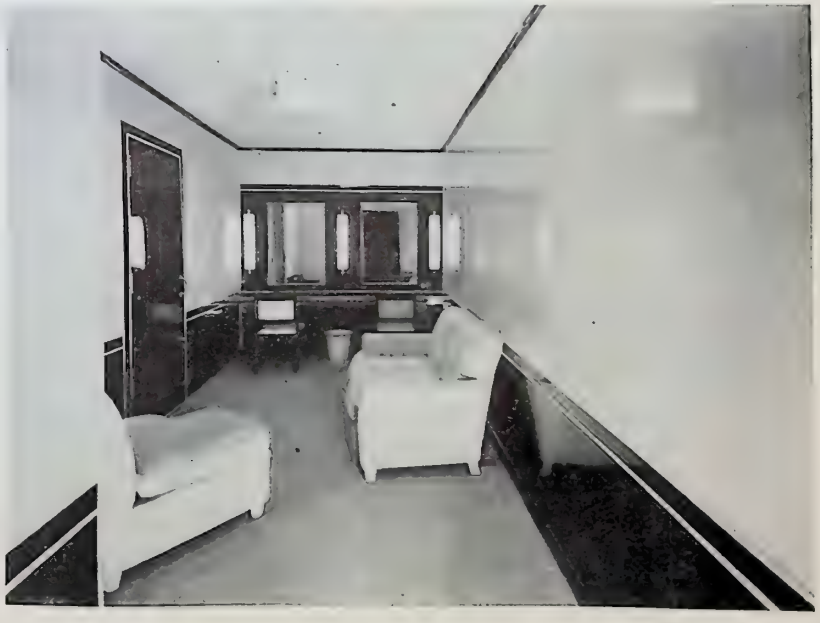
The installation itself requires the establishing of key lines from which measurements are made; and the use of an approved adhesive, applied to the back of each panel. Panels are measured and cut, adhesive is spread and installation is made. Sheets are kneaded and pressed to obtain a perfect bond between wallboad and wall surface. Some manufacturers suggest bracing the panels overnight to insure the most satisfactory results.

Use of Mouldings

Installation is further simplified, and



A DRAB, unattractive lounge, above, has been transformed miraculously into a modern and eye appealing room, as seen below, by the judicious use of plastic paneling on walls, ceiling and door.





THE WALLS OF THE FOYER AND LOBBY of the Grand, Lancaster, Pa., have been panelled with Marlite pre-finished Prima Vera Wood Pattern, with Presdwood Mouldings completing the installation. Below, persian red and spring green deluxe Marlite combine to enhance the beauty of the entrance of the Palms-State, Detroit. Bottom, a concession stand is made attractive through the use of plastic panels.





appearance enhanced, through the use of mouldings. There are several types of wallboard mouldings available, most of which fall into one of three classifications: metal, plastic or presdwood. Depending upon the classification, these are available in a full range of types and colors for every conceivable installation or use. The better mouldings are scientifically designed to compensate for natural expansion of the wall and ceiling panelings; and many mouldings are designed, also, to permit installation of both mouldings and panels with concealed fastenings. As with the panels, most of the available mouldings are adaptable to any structural requirements, being easily fitted around corners and curves. The sparkle and brilliance of the metal mouldings, and the color of the presdwood and plastic types permit considerable latitude in the selection of the proper moulding to complement any decorative theme.

Cleaning is Easy

Particularly important is the ease with which plastic-finished wallboard can be cleaned. Here, again, we refer especially to the premium quality wallboard, with integrated surface and base. Merely wiping with damp cloth will remove dirt and grime. This operation takes little time and effort, yet restores all the original lustrous beauty of the paneling. With simple care, plastic-finished wall paneling never requires refinishing, a factor in cutting annual decorating costs to the minimum. At least one manufacturer makes a cleaner-polish that cleans, waxes and polishes pre-finished panels in one operation, and is widely used for maintenance of theatre installations of plastic-finished paneling.

Rest Room Accessories

To add still another word concerning theatre interiors, we might mention that at least one manufacturer of wall and ceiling panels also offers a complete line of rest room accessories. Finished in brilliant chrome and triple coated for a life-time of service, these accessories are of a modern octagonal design and harmonize with any plumbing fixtures. Die-cast from non-rusting metal and electroplated, these accessories are specially designed to withstand the unusually severe service to which such fixtures are subjected in public buildings.

Effective Interior Decoration

As shown in the illustrations, the use of plastic-finished wall and ceiling panels provides colorful, attractive interiors that please the most discriminating patrons and, at the same time, are practical, requiring little maintenance time and effort, and eliminating annual redecorating chores. That this combination of attractiveness and practicality is economically advantageous is evidenced by the constantly increasing number of theatre installations utilizing this modern method of creating beautiful, durable interiors.

DESIGNERS BUILDERS

E.S.T.

FLEXLUME SIGN CORPORATION

1904

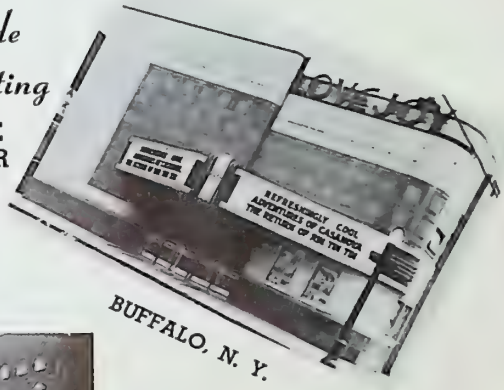
THEATRE MARQUEE SIGNS

Cold Cathode
Interior Lighting

UNION MADE
UNDERWRITER
APPROVED



FRANKLIN, PA.



BUFFALO, N. Y.

BEFORE



CANONSBURG, PA.

AFTER





SYRACUSE, N. Y.



TONAWANDA, N. Y.

Our long experience in the manufacture of theatre marquees assures you expert workmanship in fabrication and design.

Send photo or blue print of theatre front for free estimate, sketch and specifications on a new marquee or the remodeling of present marquee.

FLEXLUME SIGN CORP.

General Offices: 1464 MAIN STREET, BUFFALO 9, N. Y.
Factories at BUFFALO, N. Y. and ERIE, PA.

ADLER *Modern*

"THIRD DIMENSION" PLASTIC *and* CAST ALUMINUM LETTERS

with Exclusive

STAINLESS STEEL

"REMOVA-PANEL"

PATENTED

GLASS-IN-FRAME UNITS

Brilliant Changeable Letters of 2-Tone PLASTIC and Cast Aluminum in Popular Sizes, for Interchangeable Use on Adler Stainless Steel, Locked-in-Line Multi-Decker Frames.

ADLER "THIRD DIMENSION" 2-TONE MODERN PLASTIC LETTERS

E 17" PLASTIC LETTERS

IN VARIOUS COLORS

NOW AVAILABLE

These outstanding letters embody the original Adler "Third Dimension" design, with recessed face and solid triangular bevels. They are toughest and strongest—extra thick — with integrally molded supporting means — practically unbreakable. Combine sound construction with the brilliant beauty of permanent, translucent colors.

ADLER "THIRD DIMENSION" CAST ALUMINUM LETTERS

Come in all popular sizes—4"-6"-8"-10"-12"-16"-24"—for interchangeable use in sizes from 8" to 24"—also interchangeable with Adler PLASTIC Letters—all on the same Adler supporting frames. Sold under positive guarantee that FOR EVERY ADLER CAST ALUMINUM LETTER YOU BREAK, WE GIVE YOU A NEW ONE FREE.

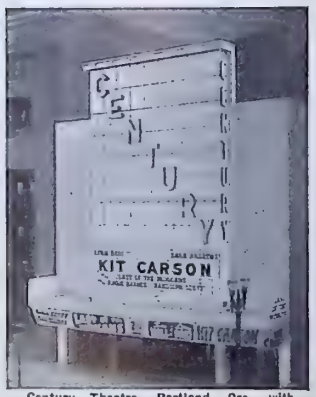
HIGH CHANGEABLE LETTER SIGNS LIKE THIS ARE MADE POSSIBLE BY ADLER PATENTED "REMOVA-PANEL" FRAMES.



How 10" and 17" Adler PLASTIC Letters give new pep and eye appeal to any program display for Drive-In Theatres or standard marquees.



Don Theatre, Shreveport, La. V-shaped vertical attraction board 30 ft. high—THE HIGHEST CHANGEABLE LETTER SIGN EVER BUILT. 10"-12"-16"-24" Adler "Third Dimension" Letters used interchangeably on "Remova-Panel" Glass-in-Frame Units.



Century Theatre, Portland, Ore., with 6 line (12 bar) Adler "REMOVA-PANEL" Display. Note changeable signs also on ends, with Adler Letters.



Colosseum Theatre, Johannesburg, South Africa, with 8" and 16" Adler "Third Dimension" Letters supported on the same frames. Adler equipment is in use the world over.



Avon Theatre, Savannah, Ga., with all-curved marquee displaying 10" and 16" Adler "Third Dimension" Letters on curved Glass-in-Frame Units.



Royal Theatre, San Francisco, showing Adler PLASTIC Letters on Adler "REMOVA-PANEL" frames.

CHANGEABLE PROGRAM DISPLAY

NOTE ALL THESE IMPORTANT FEATURES

"THIRD DIMENSION" PLASTIC LETTERS in popular sizes, used interchangeably on same frames with Adler Cast Aluminum "Third Dimension" Letters. Furnished in red, green, blue and amber.
"THIRD DIMENSION" CAST ALUMINUM LETTERS in 4"-6"-8"-10"-12"-16"-24" sizes, for interchangeable use of all sizes, from 8" to 24".
"REMOVA-PANEL" EQUIPMENT—Not necessary to remove any frame for maintenance.
MULTI-DECKER FRAMES FOR INTERCHANGEABLE USE OF 8" to 24" "THIRD DIMENSION" LETTERS.
LOCKED-IN-LINE FRAMES Stainless Steel—strong, rigid, skyscraper-like construction—light-tight joints.
GLASS-IN-FRAME CONSTRUCTION—we furnish the glass and glaze frames complete before shipment.
FRAMES SET DIRECTLY IN GROOVES OF SIGN—no changes required—no clips to scratch the surface.
POPULAR 10"-16"-24" COMBINATION—letters line up perfectly—larger letters for STARS and TITLES.
TOUGH, BAKED FINISH ON CAST ALUMINUM LETTERS—for long, satisfactory service.
ATTRACTIVE COLORS—standard finish on Cast Aluminum Letters, black face and silver bevels. Red, blue, green, amber or other colors furnished. PLASTIC Letters in solid, permanent colors throughout—red, green, blue and amber.
⅞" WIDE GROOVE CONSTRUCTION—recommended, but we also furnish frames to fit existing grooves as narrow as ¼" wide.
CURVED MARQUEE OR MITRED FRAMES—furnished.
WONDERFUL FOR REPLACING OLD STYLE LETTERS. We furnish frames to fit any existing grooves, down to ¼" wide.
APPROVED BY UNDERWRITERS' LABORATORIES, INC.
LETTERS GUARANTEED—For every Adler Cast Aluminum letter you break, we give you a new one FREE.

ADLER Exclusive "REMOVA-PANEL"

(Patented)

SAVES ITS COST FAST IN MAINTENANCE TIME & LABOR

All cleaning, repairs, replacements done through small, light-weight "REMOVA-PANELS" instead of lifting out large, heavy frame units with glass. USED FOR ORDINARY LAMPS, NEON OR FLUORESCENT TUBING. "REMOVA-PANEL" units alternate with Regular Type units in the opening, as furnished. Every panel between all horizontal letter bars in standard "REMOVA-PANEL" units is removable panel. OVER 7 YEARS OF SUCCESS!







RKO Hillstreet Theatre, Los Angeles, Calif., a large, modern straight and curved marquee with 10" and 16" Adler "Third Dimension" Letters on "Remova-Panel" frame equipment.



Famous Paramount Theatre, Times Square, New York, utilizing 17" and 10" Adler PLASTIC "Third Dimension" Letters used interchangeably with Adler 24"-16"-12"-10" Cast Aluminum Letters, all on Adler "Remova-Panel" Frames.

WRITE FOR COMPLETE INFORMATION



Loew's State Theatre, Newark, N. J. Here the larger 24" Adler "Third Dimension" Letters provide effective display with 10" Letters, all on the same "Remova-Panel" Frames.



Warner's Earle Theatre, Washington, D. C., with visible opening 32' long x 9' high (7½ times). Outstanding display of 8"-12"-16"-24" Adler "Third Dimension" Letters on "Remova-Panel" Frames.



A Fox Theatre Installation of 10" and 16" Adler Letters used Interchangeably on Adler Frame and Glass Equipment.

ADLER "3RD DIMENSION" FOR MODERN DISPLAY LETTERS

ALL SIZES 8" TO 24" INTER-CHANGEABLE

UNITED STATES PATENTS		Canadian Patents
No. 1-830,414	No. 2,163,298	No. 369,858
No. 1,989,855	No. 2,272,733	
No. 2,038,978	No. 2,284,626	No. 411,691
No. 2,113-285	No. 2,313,723	No. 421,193
No. 2,144,954	No. 2,313,724	
No. 2,155,904	No. 2,319,910	England Patent
No. 2,156,257		
And other Patents Pending		No. 442,512

WRITE FOR COMPLETE INFORMATION—NO OBLIGATION

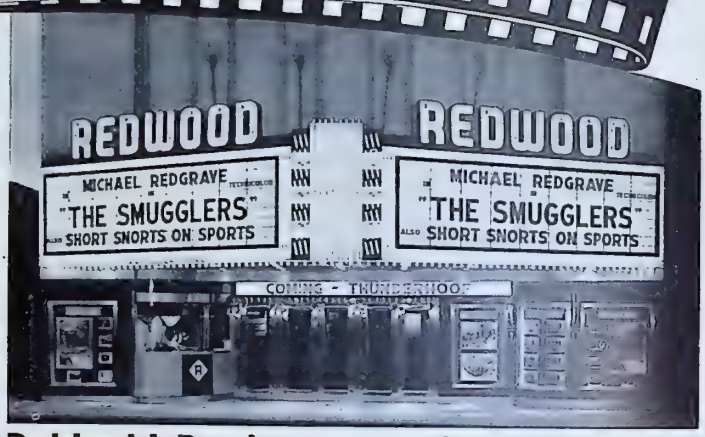
LISTED BY UNDERWRITERS' LABORATORIES, INC.

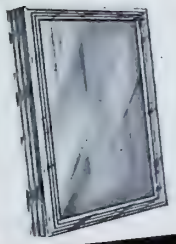
ADLER SILHOUETTE LETTER CO.

General Offices: 3021 WEST 36th STREET, DEPT. TC, CHICAGO 32, ILLINOIS

CHICAGO — NEW YORK — TORONTO, CANADA — LONDON, ENGLAND

ONE UNIT or a COMPLETE THEATER FRONT

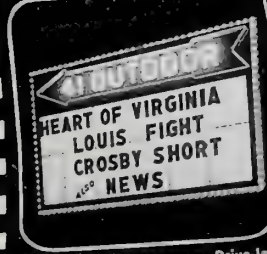




Aluminum poster cases—built of heaviest aluminum extrusions, with 8 exclusive features. Also a de luxe line of polished stainless steel poster cases.



Box offices—first in beauty, convenience, comfort, service. It's easy for your cashier to greet patrons with a smile from a Poblocki box office.



Light the way to more Drive-In business with these patented attraction signs. An exclusive design saves electric current, lamp and tube cost.

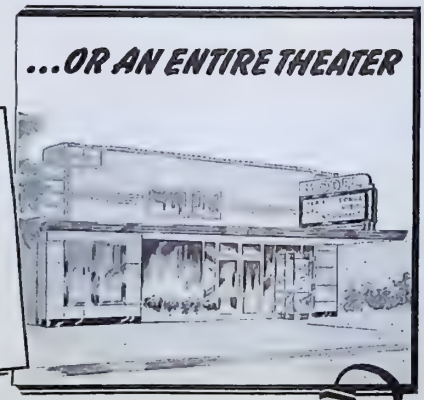
Poblocki Products are Superior

Whether you need a new aluminum or stainless steel poster case, or a modern, attractive complete theatre front, or even plans for a prefab theatre, you'll serve your own interest best by consulting Poblocki & Sons. Thirty years of manufacturing experience has been built into "up-to-the-minute" design, resulting in many of the finest theatre "faces" now attracting patrons all over the country.

Complete fronts are designed for new buildings, or to modernize old theatres. They utilize colored porcelain, stainless steel, and the finest in outdoor lighting equipment.

Marquees with easily read signs, incorporating neon and incandescent lighting are specially engineered when a complete front is not required.

...OR AN ENTIRE THEATER



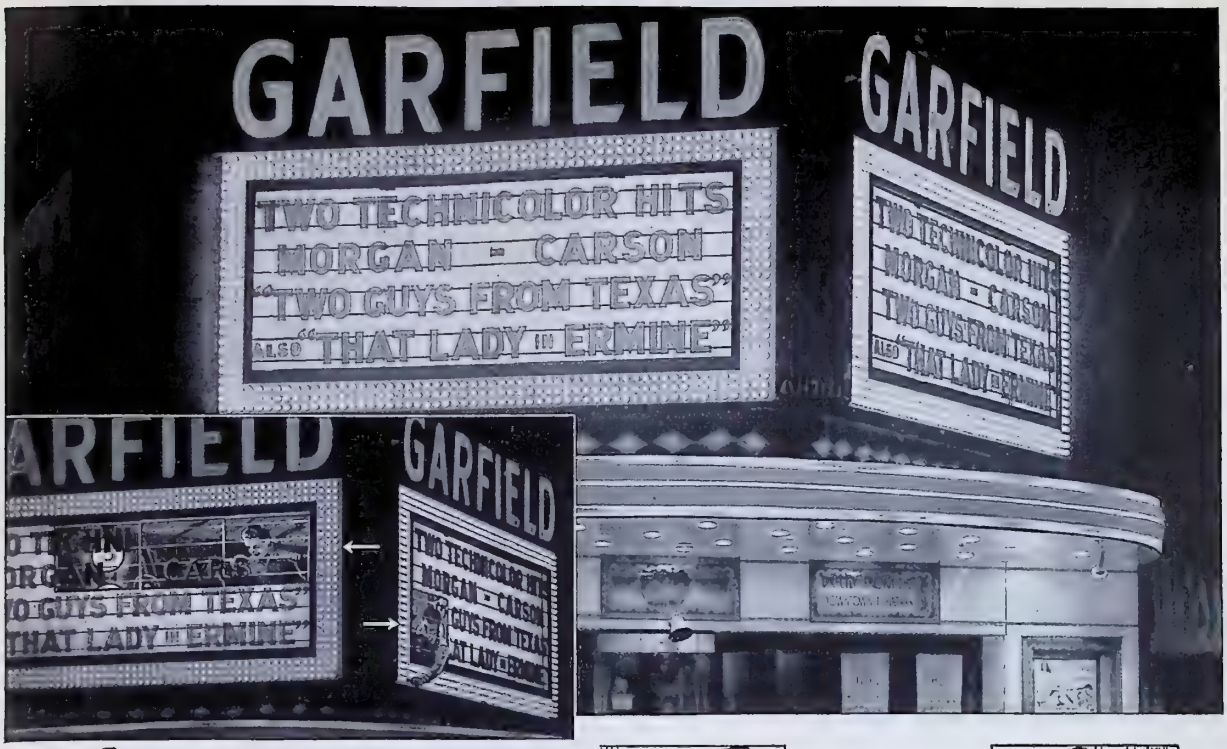
For communities with an immediate need for a smaller theatre, Poblocki offers a perfect solution. By using our complete prefab plans, together with a specially designed prefab front, you open your doors in **90 DAYS** — thus amortizing your investment during months otherwise lost to slow, costly building. The quonset theatre is acoustically perfect, can seat as many as 822 patrons, and is only half the cost of a conventional theatre. It will pay you to investigate.



Write or Call

Poblocki AND SONS

2159 S. KINNICKINNIC AVE. MILWAUKEE 7, WISCONSIN

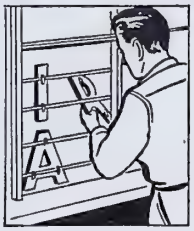


Now CHANGE LETTERS from the **INSIDE**

Would you like a marquee that

- Opens from the back, permitting you to change marquee letters from INSIDE the marquee, eliminating use of ladders?
- Uses only 12 200-watt lamps for the same area which now requires 216 40-watt lamps, saving 75% in electrical current and 32% in lamp cost?
- Maintains near 100% light efficiency *at all times* at only ten per cent of your present maintenance cost?
- Provides handy storage space *within the marquee* for changeable letters, lamps and cleaning materials?
- Allows further maintenance savings because electrical equipment, such as flashers, etc., are installed inside, safe from snow, rain or wind?
- Pays for itself in approximately 3 to 5 years because of these and other outstanding features?

Then investigate the new Poblocki marquee — TODAY!



SAFETY

No hazardous ladder climbing or balancing — no blocking traffic — no adverse weather to fight. Make your changes safely and swiftly from INSIDE.

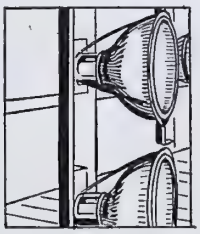




CONVENIENCE

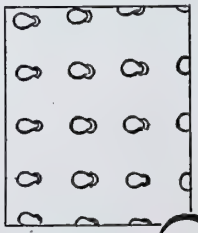
For changing or cleaning, your equipment is stored right where you need it, inside the marquee, directly in front of the attraction sign.





ECONOMY

Uses only 2400 watts to illuminate the same area which now requires 8640 watts. Saves on letter and lamp breakage. Electrical equipment lasts longer inside.



DEPT. D

POBLOCKI & SONS
2159 S. Kinnickinnic Ave., Milwaukee 7, Wis.

Please send me complete information and literature on the new Poblocki marquee.

Name .....

Address ..... State.....

City.....

OTHER POBLOCKI PRODUCTS

Complete Porcelain and Stainless Steel Theatre Fronts • Marquees • Signs • Box Offices • Poster Cases, Aluminum and Stainless Steel • Easel Poster Cases • Stainless Steel Doors and Frames • Pre-Designed Theatre Plans.



Poblocki AND SONS

2159 S. KINNICKINNIC AVE. MILWAUKEE 7, WISCONSIN

Mr Exhibitor— let's get down to Poster cases!!

An "A" Production from Hollywood to You!



FEATURING

1. **Functional Design of Aluminex Cases** achieves lasting beauty, commands the attention of your public.
2. **Hidden Hinges** combine engineering advantages with perfection in appearance.
3. **Glass is set in Neoprene Rubber**—insulates against shock, breakage.
4. **Long Life**—Rust-proof aluminum is insured against corrosion by buffing, acid-etching, and alumiliting.
5. **Engineered Illumination** focuses evenly distributed light on posters.
6. **Extruded Aluminum Poster Holders** on all four sides entirely mask edges of poster. Poster holders snap open, stay open; snap shut, stay shut.
7. **Positive Tumbler Locks** assure safe, trouble-free operation.
8. **Maximum strength, rigidity** attained by use of a one-piece heavy extruded aluminum section.
9. **Door Check**—locks door in open position and keeps it from blowing shut or slamming against wall.
10. **Heavy Duty Aircraft Extruded Hinges** with stainless steel pins test to 240 pounds per lineal inch. These extruded hinges make door sagging impossible.
11. **Removable Glass Stops** made possible by glass being set in rubber instead of glazing compound. Only a screwdriver is necessary to change glass.
12. **Beveled Light Shields** protect the eye from glare and give a pleasing appearance of depth.



Aluminex

POSTER CASES & ACCESSORIES

Distributed by NATIONAL THEATRE SUPPLY
Division of National-Simplex-Bludworth, Inc.
Products of Theatre Specialties, Inc.

Another "A" Production

Marquee letters in radiant plastic

Marquee letters with visible third dimension

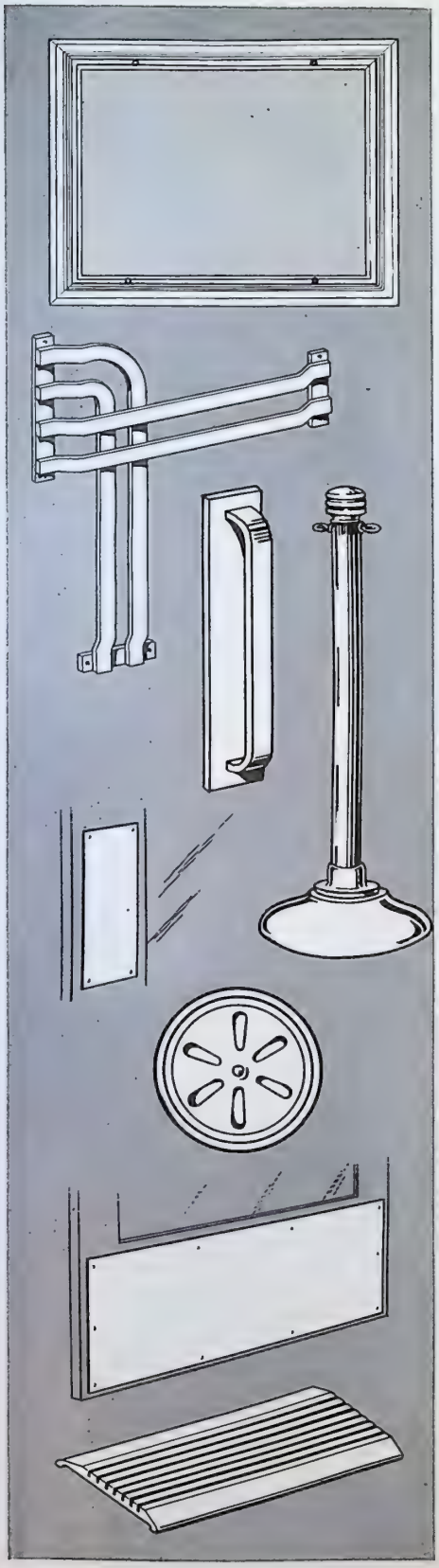
Only **BEVELITE** Marquee letters can be locked on the track (*any* track).

Only **BEVELITE** can provide a background with no unsightly vertical lines.

Only **BEVELITE** can provide Plexiglas background, which is practically unbreakable and has a higher light transmission factor.

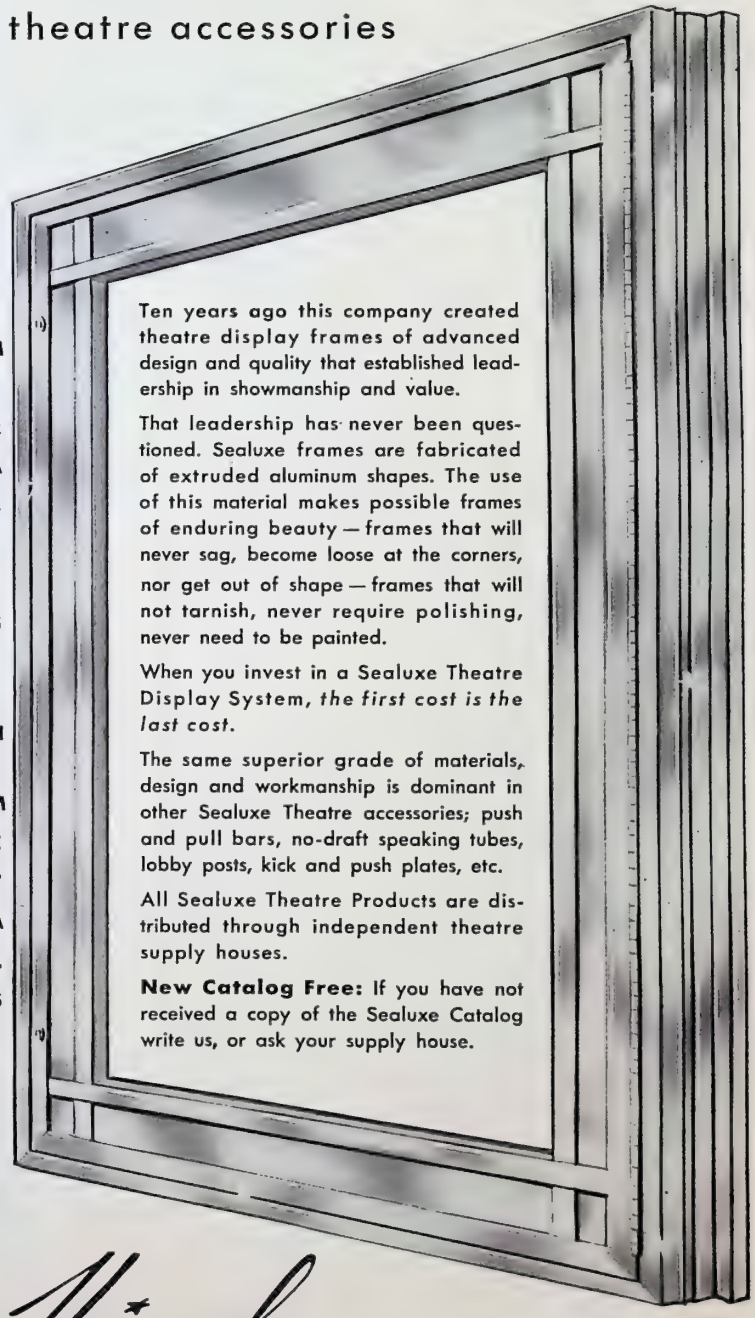


BEVELITE MARQUEE LETTERS



Wherever there is a theatre, there is a need for a Sealuxe theatre display system and other Sealuxe theatre accessories

MIRACLES IN METALS



Ten years ago this company created theatre display frames of advanced design and quality that established leadership in showmanship and value.

That leadership has never been questioned. Sealuxe frames are fabricated of extruded aluminum shapes. The use of this material makes possible frames of enduring beauty — frames that will never sag, become loose at the corners, nor get out of shape — frames that will not tarnish, never require polishing, never need to be painted.

When you invest in a Sealuxe Theatre Display System, *the first cost is the last cost.*

The same superior grade of materials, design and workmanship is dominant in other Sealuxe Theatre accessories; push and pull bars, no-draft speaking tubes, lobby posts, kick and push plates, etc.

All Sealuxe Theatre Products are distributed through independent theatre supply houses.

New Catalog Free: If you have not received a copy of the Sealuxe Catalog write us, or ask your supply house.

Universal CORPORATION

6710 DENTON DRIVE • DALLAS 9, TEXAS

Manufacturers: Browne Folding Type Windows • Double Hung Windows • Casement Windows • Picture Windows • Alumitex Spandrels, Pilasters, Fins, etc.

Distinctive Metal Work for the Modern Theatre

STAINLESS STEEL **ALUMINUM** **BRONZE**



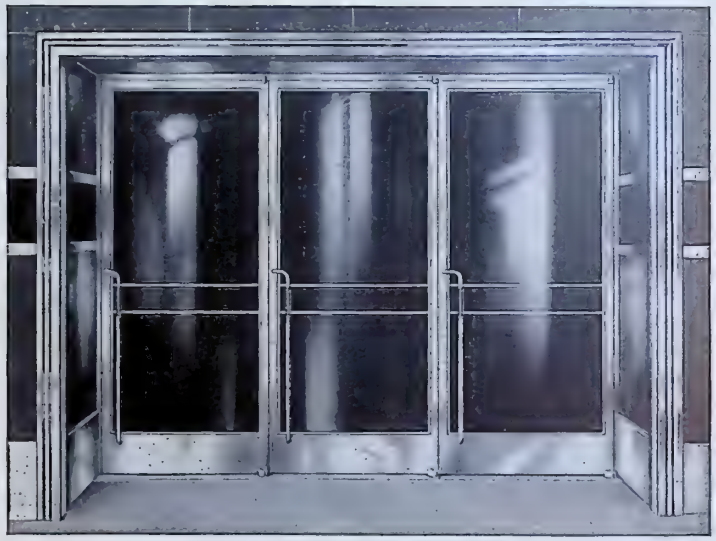
Remodeled Exterior in Stainless Steel and Structural Glass

Whether remodeling or building new, the Modern Theatre Exterior and Lobby demands Distinctive Metal Work to enhance its beauty. RAMCO craftsmen can provide your needs for

Doors and Entrances
Metal Trim
Door Hardware
All-Metal Displays
Ticket Receptacles
Railings in
Stainless Steel, Aluminum or Bronze



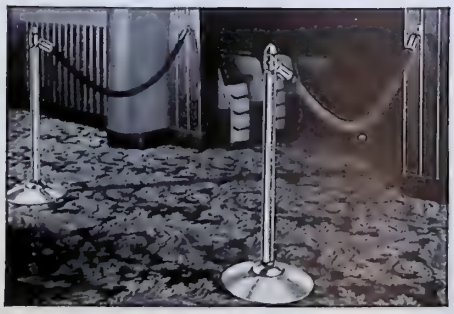
Standard 40x60" RAMCO Stainless Steel Display Adapted to Required Opening



Theatre Entrance with RAMCO Kleer-Vu Doors and Hardware



Ticket Receptacle—Custom-Built Railing RAMCO Door Hardware

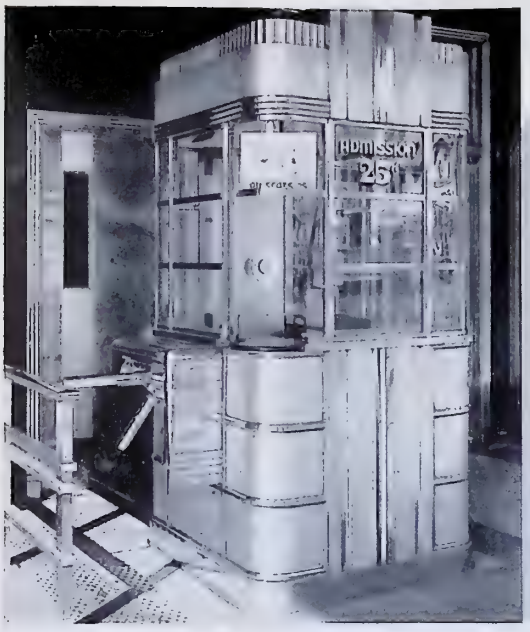


Standee Rails and Portable Posts

Write Today for Complete Catalog

THE RELIANCE ART METAL COMPANY

595 WEST McMICKEN AVE. • CINCINNATI 14, OHIO



Stop Boxoffice Losses!

THE PEREY "Magic Barrier" TURNSTILE SYSTEM

- Assures an automatic tamper-proof, registered count on all admissions, so accurate that it is accepted by the Internal Revenue Department for tax purposes.
- Cuts your payroll by eliminating the necessity of ticket takers.
- Prevents pilfering by cashiers and cashier-doorman manipulation schemes.
- Stops gate-crashing and "walk-ins".
- Eliminates the need of costly ticket machines, ticket choppers and tickets.
- Permits closer attention to change-making by simplifying the cashier's job.
- A separate register is provided for price differential between adults and children. A conspicuous indicator lights up on all child admissions, preventing the juggling of adult and children admissions by the cashier.
- Handles peak business faster. Automatically guides patrons from the boxoffice to the entrance.
- Invariably pays for itself in a few weeks by revenue previously lost.
- Readings quickly taken at the time of admission scale change.
- Satisfies strictest safety requirements. The entrance becomes a non-registering exit in emergencies.
- Locking arrangement prevents entrance when the theatre is closed.
- Well constructed for constant use without failure.
- Requires little space.
- May be installed anywhere regardless of slope of the floor.



A FEW USERS:

Lux (Oakland), Tryon (Charlotte), Locust (Philadelphia), Colony (Raleigh), Hitching Post (Los Angeles), Round Up (San Francisco), Pix (Norfolk), Grand Central, Airline News (New York), and Trans-Lux, Newsreel, Telenews and Visulite Theatres everywhere.

WRITE TODAY FOR DETAILS

THE PEREY TURNSTILE COMPANY

101 Park Avenue • New York 17, N. Y.

AMERICAN MAT CORPORATION

"America's Largest Matting Specialists"

1721 Adams Street • Toledo 2, Ohio

A COMPLETE LINE OF FLOOR MATTING

For Promoting Safety • Providing Comfort • Reducing Fatigue • Furthering Sanitation

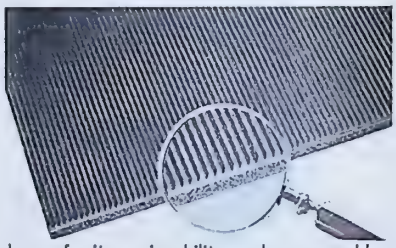
AT ALL POINTS IN THE THEATRE

FOR A DISTINCTIVE ENTRANCE
PERFORATED CORRUGATED MATTING



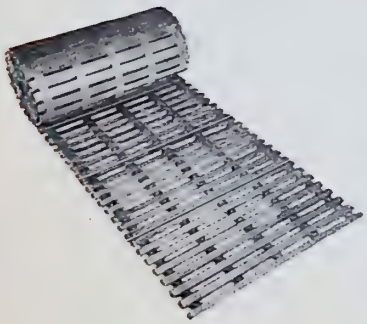
Especially recommended for odd-shaped entrances. Good dirt removing qualities. Long-wearing. Three thicknesses: 1/4", 3/8" and 1/2" in a variety of attractive colors, including black, gray, brick red, white, blue, green, orange, yellow and dark brown. Any design or special style lettering can be furnished and in contrasting colors to the main background.

FOR AISLES AND BOXOFFICES
CORRUGATED SPONGE RUBBER MATTING



Combines the cushioning factors which afford comfort underfoot with the long-wearing qualities which heretofore have usually ruled out resiliency. Has a 1/8" corrugated rubber matting top surface which is applied to a 3/16" sponge base, thus combining the outstandingly popular features of both corrugated matting, known for its serviceability, and sponge rubber, which affords comfort and silence. Easily handled and easily cleaned.

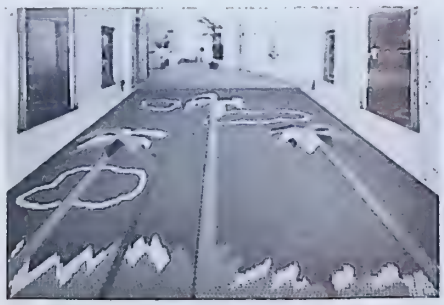
FOR BACK OF COUNTERS and POPCORN MACHINES
AMERICAN COUNTER-TRED MATTING



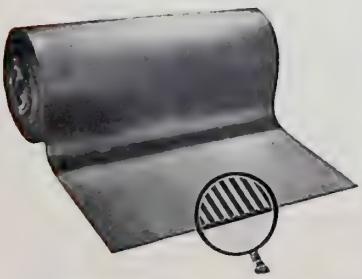
A tough, long-wearing, rubber and cord matting with a resilient non-slip surface. Easily handled for cleaning. 3/8" thick, 24" wide, any length.

FOR A BEAUTIFUL LOBBY
EZY-RUG RUBBER LINK MATTING

Traps all dirt at the door, keeps it out of sight, and prevents tracking into the theatre. Reduces frequency of redecorating necessitated by dirt whirled into the air by the heating and cooling systems. Eliminates dangers of wet, slippery flooring. Available with lettering and designs. Easily handled.



FOR SILENCING FOOTSTEPS
UTILITY CORRUGATED MATTING



MAXIMUM SERVICE

•

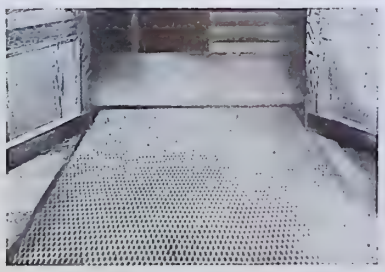
MINIMUM COST

•

EASILY CLEANED

FOR BACK OF COUNTERS
TUF-TRED TIRE FABRIC MATTING

Long wearing. Beveled nosing on all sides. 5/8" thick, up to 6' wide, any length.



Write for prices and folder "A Mat for Every Purpose"

The SENSATION IN THEATRE FLOORS



FRIENDLY, FESTIVE, GLAMOROUS FLOORS . . . .

AN ENDLESS VARIETY OF BEAUTIFUL PATTERNS, EVERY INSTALLATION CAN BE DIFFERENT.

FREMONT RUBBER TILE

AFFORDS ADVANTAGES NOT TO BE HAD IN ANY OTHER!

- **DISTINCTIVE, LASTING BEAUTY**
  Twelve rich, solid and marbleized colors. Colors go all the way through the tile, can't show wear. Non-fading.
- **EASE OF CLEANING**
  Sweeping or light mopping keeps it spotlessly clean, looking like new. No pores to hold dirt.
- **SOUND CONDITIONING**
  Suppresses the sound of noisy footsteps.
- **COMFORT UNDERFOOT**
  Cushions every step.
- **RESISTANCE TO WEAR**
  Withstands heaviest traffic, denting, scuffing. Burning cigarettes leave no permanent blemish. Grease-resistant.
- **SAFETY UNDERFOOT**
  Great non-slip properties.
- **EASE OF APPLICATION**
  Lies flat. Cut accurately. Uniform thickness.

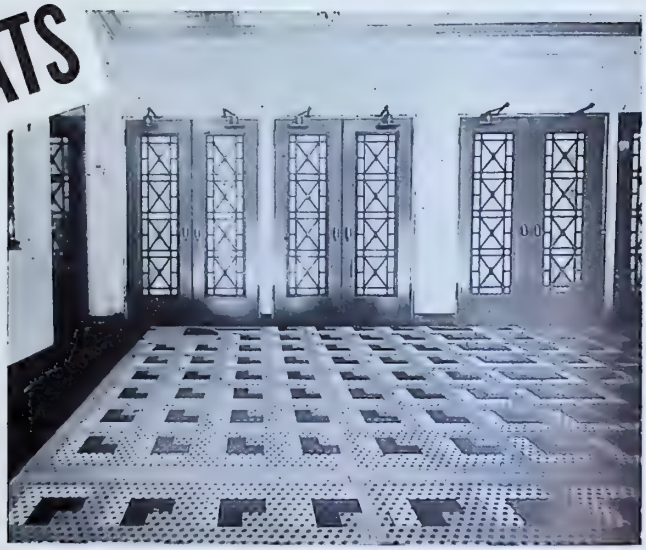
FLOORS BY FREMONT ARE FLOORS OF BEAUTY — FREMONT Rubber TILE

Write for Free Descriptive Literature Today.

FREMONT RUBBER COMPANY

319 McPherson Highway, Fremont, Ohio

PERFO Rubber THEATRE MATS



Rubber mats in lobby of theatre, Washington, D.C., as designed by John and Drew Eberson, Architects, New York City.

CORRUGATED AND PERFORATED MATS

CORRUGATED RUBBER MATTING

FOUNTAIN MATS

RUBBER STAIR TREADS



The entrance sets the decorative theme for your entire theatre. Perfo Rubber Mats will add the final note of colorful distinction, with the plus values of safety and long wear. Soil won't get a chance to spoil your rugs with a Perfo Mat in the entry. The corrugations and perforations completely remove foot dirt before it can do any damage. Your patrons will be safer too, those same corrugations make an effective non-slip surface. Best of all, Perfo Rubber Mats are a long-term investment. Thousands of tramping feet, over the years won't dim their beauty.

Corrugated and perforated Perfo Rubber Mats are available in many interesting color combinations. They can include names, monograms, and special inserts to create a really individual design.

Our Engineering Department can furnish detailed designs for your present theatre, or work from the blueprints of your new one. Design ideas and quotations will be furnished on request.

PERFO Mat & Rubber Co., Inc.

320 WEST 56th STREET, NEW YORK, N. Y.

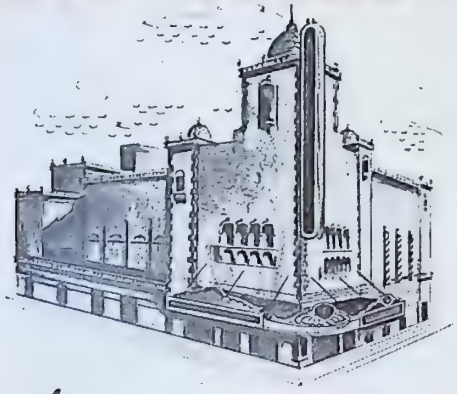
Specialists in Rubber to Walk on

SMALL HOUSE



THERE'S AN Automatikpot TICKET CONTROL SYSTEM FOR YOUR HOUSE

BIG HOUSE



Automaticket

ELECTRIC TICKET-ISSUING MACHINE

—standard throughout the world.



Automaticket

"TRIGGER ACTION" TICKET ISSUING MACHINE

—entirely non-electric—the low cost ticket register that does everything the most expensive machines will do.



Automaticket

STUB ROD CONTROL BOX

—the "spotter always on duty"—preserves tickets in sequence of collection—detects and reveals any irregularity.



Automaticket

ELECTRIC TICKET CHOPPER

—automatically chops tickets at the door
—files stubs in sequence of collection—
eliminates palming and reselling and other ticket-collection tricks.



Whether you operate the biggest chain or a little neighborhood independent—General Register has an Automaticket Control System to give you *complete control* of ticket-issuing and ticket-collection . . . and *positive protection* against costly irregularities or ticket manipulations.

Ask your theatre supply dealer to explain how your operating profits will be increased by installing an Automaticket Control System.

Protect your interests—be sure that you get your full share of the profits your theatre is making. Automaticket Control Systems will positively and permanently *plug the leaks!*

GENERAL REGISTER CORPORATION

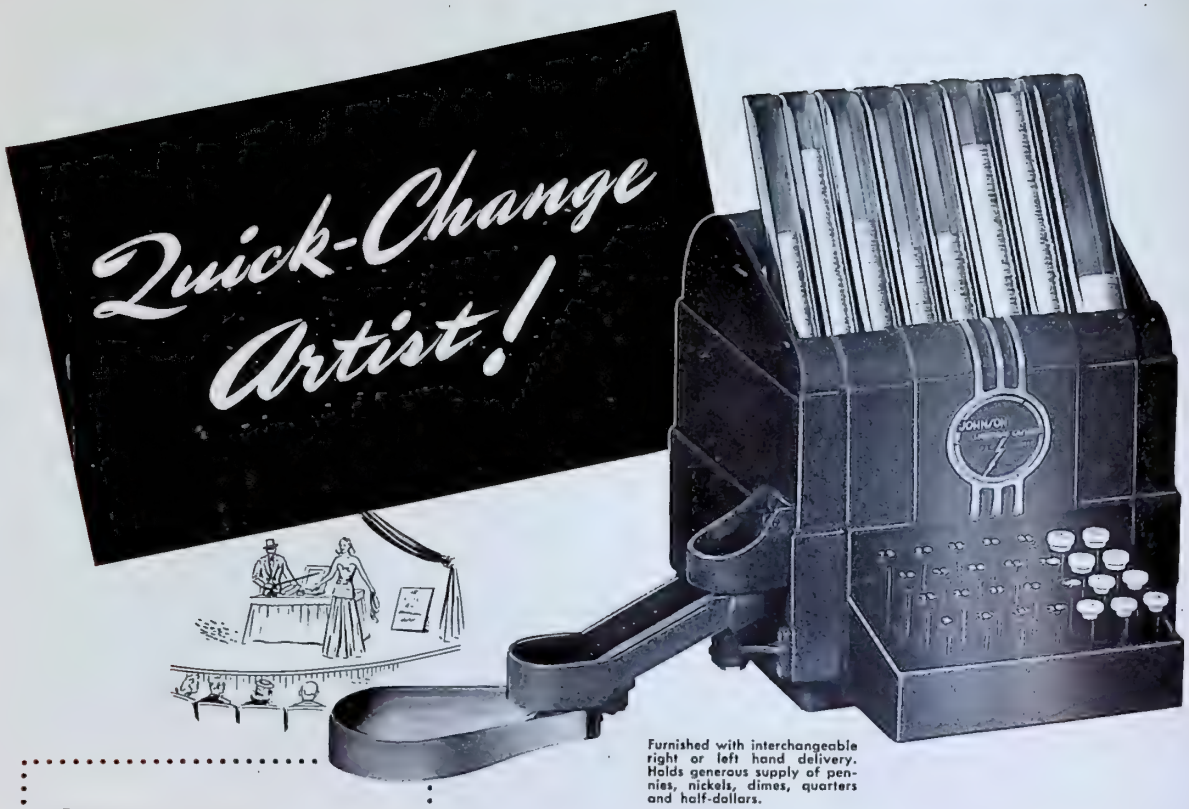
36-20 33rd Street
Long Island City 1, New York

1136 N. Las Palmas
Hollywood, Cal.

1018 S. Wabash Ave.
Chicago, Illinois

and Authorized Dealers everywhere

Quick-Change Artist!



Furnished with interchangeable right or left hand delivery. Holds generous supply of pennies, nickels, dimes, quarters and half-dollars.

Meets Every Coin-Changing Requirement!

- √ **FAST**—Lightning-like action
- √ **ACCURATE**—Exclusive design assures accurate coin control
- √ **EASY TO OPERATE**—Simplified light touch keyboard facilitates operation
- √ **STURDY**—Reinforced construction provides long, trouble-free service
- √ **EFFICIENT**—Designed primarily for theatres to meet box office requirements
- √ **DEPENDABLE**—You can rely on its lightning-like accuracy year after year
- √ **MODERN DESIGN**—Advanced styling, beautiful finish
- √ **ECONOMICAL**—Saves money through its speed, accuracy and durability

Advantages like these make the JOHNSON LIGHTNING CASHIER a must for more profitable box office operation.

Advanced Series

JOHNSON LIGHTNING CASHIER

Box office headaches disappear when this amazingly accurate JOHNSON LIGHTNING CASHIER is on the job! Designed by America's leading money-metering engineers, it is built to make correct change fast . . . stop short-change and over-change . . . and handle rush hour crowds without extra help. The JOHNSON LIGHTNING CASHIER does the "brain work" as well as the labor. Subtracts total admission from the amount tendered, returns exact change instantly, keeps patrons happy and reduces shortages in your receipts and actually pays for itself through its savings. Find out today how you can step up box office efficiency with this dependable JOHNSON equipment.

FULL DETAILS ARE YOURS FOR THE ASKING. WRITE TODAY!

JOHNSON FARE BOX COMPANY
4619 N. RAVENSWOOD AVE., CHICAGO 40, ILL.
420 LEXINGTON AVE., NEW YORK 17, N. Y.

INTERIOR *and* AUDITORIUM

1948-49

Black Lighting Made Easy

The Elementary Facts About Theatre Use and Introducing A New "Packaged" Mural With Theatre Possibilities

One of the latest developments in theatre decoration — black-light murals—utilizes a combination of invisible ultra-violet waves and special fluorescent paints. When the house lights go down, these murals come alive in a rich display of glowing color. Installation of equipment is not a complex procedure; however, there are special electrical and dimensional requirements to be observed.

Black-light fluorescent murals can be painted directly on the wall by an artist familiar with the new technique. If the theatre owner desires a simpler procedure, he can order prefabricated fluorescent murals, which are available in an interesting variety of patterns and subjects. These prefabs make it possible for every theatre — new or remodelled, from the smallest to the largest—to enjoy the uniquely beautiful decor of black-light art.

By Ronald J. Elliott
Switzer Brothers, Inc.

The Importance of Decoration

Most of the current discussions of ways and means to get the public back into the motion picture theatres are concerned with the quality and character of the films being produced and exhibited. Once in a while a lone voice in the wilderness raises the question of making the theatres themselves more attractive, but little heed has been paid to such suggestions. This neglect is all the more remarkable in an age when appearances are recognized as a major phase of merchandising.

The butcher and baker who find business falling off do not seek the remedy in a change of merchandise. If they are good merchandisers, they refurbish their establishments and present a bright new appearance to the shopping public. The change does not always turn the trick because even the best of fixtures cannot overcome the handicaps of poor location, discourteous service, or prices that are out of line with competition. In the great majority of cases, however, the refurbishing has a healthy and immediate effect on volume and profits.

Decoration is more important to the amusement industry than to any other type of enterprise. True, the ancient Greeks had to produce their plays on a bare stage in an unadorned amphitheatre. But that was a long time ago and the Greeks hardly enjoyed the decorative facilities of twentieth century America. In this country, indeed, the theatre goer has always demanded attractive surroundings along with first-class entertainment. By and large, your American theatre goer has got what he wanted. Indeed, there are few countries whose movie houses equal our own in elegance and luxury. Nevertheless, it is distinctly dangerous to rest content with such a comparison, because the American public expects constant improvement. Having the best is not enough. The public wants something still better.

In an effort to please the public, architects and decorators have exercised apparently endless ingenuity. At the moment, the fashion in theatre decorations appears to have made a complete circle. The nickelodeon was an unadorned tunnel with a motion picture projector at one end and a screen at the other. After that, came the era of plush and velvet, followed by painted frescoes, ornamental pilasters, statues and all the rest. Latterly, the soul of the architect has revolted and in the name of modern design, we have been getting theatres with walls hardly less severe than those of the earliest cinemas. There is much to be said for functional design, but the fact cannot be overlooked that in a darkened motion picture house, a plain wall becomes nothing more than a monotonous black space.

It has been argued that the movie goer appreciates a luxurious lobby but that when he enters the auditorium, he is concerned only with the picture on the screen. It might as well be claimed that a man who sits down to read a newspaper in his own home doesn't care whether there is paper on the walls or drapes at the window. He may not seem

A MURAL designed expressly for the medium and use of black light paints by Victor Kosa.
(Photo courtesy of Switzer Brothers, Inc.)



to show much appreciation of these amenities, but take them away and he will soon want to know what's wrong. The point is that decorations serve to create an atmosphere and thereby make a definite contribution to happiness and contentment.

Pictures That Shine In The Dark

Within the past decade, a new means of creating an attractive environment in the motion picture theatre has become available with the introduction of black-light murals. Stated in the simplest way, a black-light mural is a picture that glows in the dark. It is entirely different, however, from an ordinary picture illuminated by ordinary light. A black-light mural is painted with fluorescent paints which are literally filled with light in a wide variety of colors. These paints come to life, or light up, when they are exposed to the invisible rays of special equipment which produces a flood of near-ultraviolet. If the movie goer notices this equipment at all, what he sees is a circle of purple glass which he is hardly likely to associate with the beautiful array of soft glowing colors on the walls of the theatre. The effect is mystifying and intriguing. When he is bored with the picture on the screen and his eyes begin to wander, black-light decorations serve to relax him and make him contented, whereas he would not long be satisfied to look at a blank wall.

The spectator-response to black-light decorations is in no sense theoretical. Black-light murals are already an important part of the decoration in hundreds of motion picture houses. They enjoy the enthusiastic approval of exhibitors and audiences alike.

A New Technique For A New Art

Just as with any new development, the use of black light has had to wait upon the spread of information about its possibilities and its methods of application. There are still many motion picture exhibitors who have never seen a black-light mural, but they are becoming steadily fewer. Contrariwise, there is a steady increase in the number of artists who know how to use fluorescent paints and of electricians who understand black-light equipment. Many of the existing black-light murals originally represented an experiment for all concerned. For example, artists and decorators had to forget the old color rules and learn new ones. In fluorescent black-light art, blue and yellow do not make green, but a clear white. Red and blue produce brown rather than purple, and in ordinary light, the pigments are practically identical in color. Now, the use of fluorescence for decoration is defined by rules just as precise as those which govern all the other phases of theatre design and operation.

Electrical Requirements

The first of these rules governs the installation of the necessary electrical equipment. Briefly, it is just this: **be generous with black light.** Even the best of pictures cannot be appreciated unless it can be clearly seen. The colors in a fluorescent mural cannot glow with full effect unless they are literally bathed in a flood of black light. A 250-watt black-light equipment is an absolute necessity for any mural more than 6 feet high or more than 6 feet wide, or having a total area greater than 30 square feet. Inasmuch as a mural of these dimensions would be inadequate in all but the smallest of motion picture theatres, it is safest to regard 250-watt equipment as the minimum requirement. If a mural is more than 10 feet wide, an additional 250-watt black light will be needed for every additional 10 feet of width, or portion thereof. For example, a mural that measures 28 feet in width takes three 250-watt units. This rule is dictated by the operating characteristics of the electrical equipment. The beam pattern of a 250-watt black light is an extremely elongated ellipse which cannot be more than 10 feet wide at effective range.

Experience has demonstrated that fluorescent decorations on the side walls of a theatre are most effective when the black lights are installed in the ceiling. Modern black-light equipment is specifically designed for recessed mounting and can be painted to match the ceiling so that it is hardly noticeable from below. Results are most satisfactory when the distance from the recessed unit to the wall line is equal to one-half the distance from the bottom of the mural to the ceiling. For example, if a mural is 14 feet in height and runs up to a point 2 feet below the ceiling, the distance from the bottom of the mural to the ceiling totals 16 feet. The black light should then be placed 8 feet out from the juncture of wall and ceiling. Incidentally, it is always preferable to keep the top of the mural a few feet below the ceiling rather than to run it all the way up.

Modern recessed units also make it easy to adjust the angle of lighting. It is desirable to aim the black light at a point approximately one-third of the distance from the bottom to the top of the wall mural.

The high-intensity mercury lamp used in black-light equipment demands an adequate and sustained flow of electrical current. During its initial warmup period of from 5 to 7 minutes, a 250-watt lamp will draw up to 375 watts. Unless the wiring is heavy enough to carry the maximum load, the lamp is very likely to go out. It will then have to cool before it comes on again. For the same



A LARGE AND ATTRACTIVE MURAL in the Vine Theatre, Willoughby, Ohio, by Hans Teichert Studios. *(Photo courtesy of Switzer Brothers, Inc.)*

reason, it is important to avoid placing an excessive number of black-light units on any one circuit.

No. 10 B and S gauge is recommended for the wiring and the gauge should never be smaller than No. 12 B and S. Line voltage should be checked at the time of installation and the three-tap transformer included with quality black-light equipment should be hooked up to meet local voltage conditions.

The Black-light Artist

Of course, the most carefully planned electrical installation cannot of itself assure the success of fluorescent murals. The purpose of the black light is solely to energize or bring to life the fluorescent materials used in the painting of the mural. The artist who works in the fluorescent medium is literally "painting with light." It is just as important for him to be liberal with his paint as for the electrician to provide plenty of black light.

The artist will find this new medium a challenge to his skill and his imagination. By selecting a subject which offers the fullest possibilities for fluorescent treatment and by resisting the temptation to overlay an ordinary picture with the fluorescent material, he can achieve effects which are completely impossible with ordinary colors. Always, of course, he should paint under black light and should try to approximate the actual level of illumination in the theatre where the mural is to be displayed.

Prefabricated Black-light Murals

Until very recently, the exhibitor who decided to use black-light murals was faced by the necessity of bringing together and effectively co-ordinating the skills of the architect, the electrical engineer and the artist. In many communities, this is no particular problem and the exhibitor may prefer to have the artist come in and paint his fluorescent murals directly on the walls of the theatre. On the other hand, there is now available a prefabricated mural and black-light combination, developed and produced by an entirely new technique, making it as simple to install as the most conventional of theatre decorations.

FIG. 1. Flamingos lend grace and brilliance to prefabricated murals with dramatic effects.



Prefabricated fluorescent murals are offered in a variety of patterns or subjects, ranging from pictorial scenes to formalistic designs. The exhibitor selects the picture he likes the best. It is delivered to him complete with the framing materials necessary for mounting it on the wall of his theatre. The package further includes black-light equipment designed and constructed especially for use with the particular mural he has purchased. Any carpenter can mount the mural. Any electrician can follow the simple instructions for installing the black light.

Figure 1 illustrates a mural of this new type. The subject is a group of rosy-red flamingoes standing in a limpid pool of water under the overhanging branches of a tree festooned with Spanish Moss. The painting is rendered on a specially processed fluorescent fabric so that the entire background has a rich deep blue glow.



FIG. 2. A Mississippi steamboat mural has local applications throughout the great river valley.

Another of the prefabricated murals is illustrated in Figure 2. Here a Mississippi stern-wheeler is pulling away from the levee and spilling a flood of golden light over the surface of the river. The lights of a small town twinkle on the far shore. The effect is so realistic that the river in the foreground seems literally to shimmer in the radiance from the boat. The fluorescent fabric provides a perfect midnight blue for the sky which is liberally sprinkled with light-filled stars.

Still another subject is presented in Figure 3. Bright-hued tropical fish swim above glowing beds of coral and marine plants. The fluorescent fabric furnishes an extraordinary illusion of depth.

The exhibitor who desires fluorescent murals has only to order duplicates of any of these pictures. They will be faithfully copied by the artist with exactly as much care and precision as went into the creation of the originals. The exhibitor will know exactly how his pictures are going to look, how much they will cost, and when they will be ready for installation. He will be spared the equally burdensome task of determining lighting requirements and of selecting the proper black-light equipment.



FIG. 3. Aquatic scenes are particularly adaptable to fluorescence because of unusual color tones.

The standard width of the new type of mural is 9 feet and the standard height is 14 feet. The height may be modified, if necessary, without affecting the design, but the width is fixed at 9 feet.

These dimensions are dictated by the requirements of maximum fluorescence at the level of visible illumination usually found in the motion picture theatre. Each 9 by 14 mural is accompanied by a 250-watt black-light spot equipped with a modified parabolic reflector, engineered specifically to concentrate the largest possible amount of ultraviolet on an area 9 by 14 feet. The equipment includes an adjuster, designed to fit between standard 16-inch centered joists for recessed ceiling mounting. This enables the black light to be set at the correct angle for directing its invisible radiations at the proper point, one-third the distance from the bottom to the top of the mural. The adjuster further permits the black light to be serviced either from below or from above.

Interior Decoration For All Theatres

Here, then, is a compact, packaged combination which makes black-light decorations practical for motion picture theatres of every size and type, wherever they may be located. The subjects for the murals have been selected with the conviction that the average movie goer prefers to look at "a pretty picture" rather than to puzzle over a stylized abstraction. The colors used in the paintings are warm and true, in keeping with the purpose of a place of amusement.

Prefabricated murals offer an obvious answer to the problem of completely changing the appearance of an existing theatre without extensive and costly remodeling. They will fit equally well into plans for new construction.

Design and Color Blending Trends

Leading Theatre Decorators Give Their Views on the Outstanding Decorative Developments in 1948

The editors wrote to a number of specialists in theatre decoration and asked them to give their ideas on significant trends in 1948 for this edition of THEATRE CATALOG. The replies from many different areas of the country were enlightening in their presentation of factual data and the decorators' personal reactions to the contemporary theatre interior decoration scene. Prominent in the topics discussed were color psychology, the amalgamation of functional and aesthetic purposes, the use of color, design and lighting to most efficiently serve the patron, and the trend towards simplicity.

In the year 1948 one definite trend in theatre decorating was towards simplicity and, whenever practicable, a combination of functional construction with aesthetic decor. Such simplification occurs throughout the decorative scheme of the Westmont Theatre located in Westmont, New Jersey, designed by William H. Lee, and nominated as outstanding by the Paramount Decorating Company, Inc.

"Consider the treatment of the walls for example. They are divided into slightly curved panels which are upholstered with a blue-green fabric the shade of which is somewhat similar to a teal blue. By the use of an optical illusion—curved wall sections—and of color psychology the illusion of spaciousness is suggested, enhancing the already generous proportions of the theatre. Nor is the effect completely illusory. The shape of the panels and the material covering them contribute noticeably improved acoustical properties to the auditorium.

"On the ceiling, the wall colors of teal-blue and rose are again presented but in lighter shades which harmonize with the gracefully bending lines of demarcation to form a very appropriate and attractive design.

"There are three plaster offsets which afford a transition from the auditorium walls and ceiling to the stage and form a definite setting and frame for the screen. Starting with a light shade of rose on the offset farthest from the stage, the color gradually deepens so that the offset closest to the stage is but a shade lighter than the plush valance and side drapes. Bringing this interesting transition motif to a brilliant climax, the screen curtain and borders feature a gold damask.

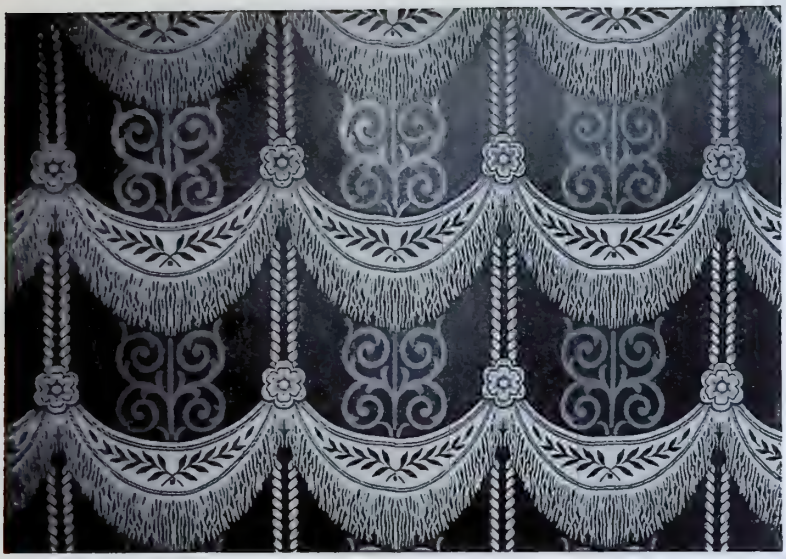
"One outstanding example of ingenuity in combining functional necessity with attractive decor to conceal the former is the art work over both exit doors, the drapes of which are of the same fabric as the valance and side drapes. These very effective plaster ornaments are painted an antique white and appear to the casual spectator to set off the exit orifice with a magnificent flourish. In reality, an air duct is located on each side of the theatre over the exit doors. The ornamental embellishments conclusively prove that even air conditioning devices rather than becoming eye sores can be faultlessly integrated into a rich and pleasing decorative arrangement."

Of course, the trend towards simplicity does not preclude experimental work and discoveries which make available new and intriguing design forms. The Maharam Fabric Corporation, for



PARAMOUNT DECORATING COMPANY submits the Westmont, Westmont, New Jersey, for its decorum.





MAHARAM FABRIC CORPORATION believes their new Regent Damask has extensive decorative merit.

example, often disproves the old saw about "nothing new under the sun" by frequently offering novel designs and fabrics to enhance interior decoration beauty in motion picture theatres, nightclubs, and ballrooms.

Their submission stated as follows: "This business of inventing new interior decoration motifs is no ivory tower affair. As specialists in the field for over forty years we are used to cooperating with drapery studios and prominent architects and designers throughout the country to assist them with their individual decorative problems.

"The conclusion we arrive at in the closing weeks of 1948 then, is one based on a wealth of experience. And our specialists find damasks are still the leading fabric for wall covering purposes in the motion picture theatre. This is true partly because damask fabrics have proven their value in satisfying acoustical requirements. It is also true for the interesting decorative possibilities inherent in damask. When the walls of a theatre are decorated with a damask, there are available myriad varied applications of colors and decorations that will blend with the stage draperies. In a specific example, we know that many beautiful effects can be obtained with harmonizing colors: Rayon plush in either a panne or an erect pile effect, used in conjunction with heavy satin festooned stage draperies, will highlight the color of the walls.

CONTINENTAL THEATRE STUDIOS is justifiably proud of their decorations in the Copley, Akron, Ohio.



"There are many designs available in damask fabrics for use in all patron-inhabited parts of the theatre;—wall treatments for the auditorium, lobby and lounges; special decorative effects for the stage; and many other applications are possible. One of the more recently developed fabrics, Regent Damask, offers a 25 inch matching repeat pattern which makes it suitable for wall coverings, stage curtains, and draperies. This damask is made in the most desired decorative color combinations, such as gold with green, red with gold, woodrose with eggshell, and turquoise with eggshell; and it is the type of damask that will blend with stage interiors."

Ever since the novelty wore off and moving pictures had to present high quality entertainment in a hall somewhat more pretentious than a mere barn, interior decoration has ably complemented the dynamic show on the screen with a subtle artistry of its own. As some historians of our day have frankly commented, the theatre environment cultivates the feeling of escape as much as the drama in light and shadows.

Functional theatres, of course, are basic and represented the first stage in the evolution of the moving picture house. However, the functional should never be allowed to dominate or submerge those elements which beckon to the patron and lead him to an extremely pleasant if temporary visit with a world of make believe.

The average citizen wants this fantasy along with the show and expects to get it at his favorite theatre. He (and she) likes to dress up and go out for the evening more or less frequently. And to make that evening out a genuine success for the patron, glamour and all the other make-believe intangibles will have to be in evidence. Therefore, according to the Continental Theatre Studios, it is the duty of designers and decorators to supply the dream world which the patron can enter and relax in. The cinema industry spares no expense in creating extravaganzas; therefore, the environment in which these creations are presented should exude a similar quality to enhance the spirit of fantasy.

Continental qualifies its beliefs as follows: "Color and design have other purposes, too. They can be utilized as an important directional factor. They can draw the patron's attention to a certain space or repel it. They can create a feeling of space or confinement, gaiety or depression. When the final artistic touch of lighting is added, a potential decorative psychology is present which can transport the movie-goer entirely out of his ordinary humdrum world into a vivid dream world. An ideal theatre decor will please his fancy with such pleasant memories that he will return again and again to partake of this happy aesthetic experience — and thereby contribute to the theatre operator's own happy experience, the jingle of tumbling coins and the rustle of folding money in the till.

"In the Copley Theatre of Akron, Ohio, the patrons realize their first feeling of luxuriousness in the inner lobby and standee space. The thickly carpeted floor truly becomes their magic carpet for an evening of make believe. And the

entrance to their make-believe world is an attractive series of doors, upholstered and covered with plastic, and studded with maroon buttons which harmonize with the colors of the carpet. The rear wall has been acoustically conditioned with a sound absorbing material and is finished in a richly colored damask.

"Overhead, the ceiling design picks up all the colors of the carpet, the plastic-covered doors and the theatre draperies. In the scalloped, concentric semi-circle design, the color pattern begins with maroon and works into rose and ecru, each color area being definitely separated from the neighboring one by silver scallops whose metallic essence is akin to the chrome hardware furnishings below.

"The organic unity of this entire space between the lobby and the auditorium creates a feeling of spaciousness and provides a definite waiting area without claustrophobic effects. That is, there are no actual walls to oppress the patrons and intrude on their transition from reality to dreams.

"The auditorium, for the patron, is the ultimate goal and the haven in which he finally settles down to forget ordinary affairs and really enjoy the evening. He is grateful, in a subconscious way, for the widely spaced, fully upholstered chairs which insure optimum comfort and convenience.

"Although he is probably too engrossed in the show to pay any attention to details, the chances are that he feels very pleasantly surrounded. The damask-covered side walls which enclose the auditorium do not create a feeling of restriction. Instead, the striped design leads the eye (at least the corner of the eye) to the pleasing contrast where plain surfaces meet the damask on each side.

"Up above, the very gay main central motif of the ceiling design diverts the eye to the stage and the picture. This overhead design has ingeniously incorporated prominent air conditioning outlets into the design, effectively camouflaged them and transformed them from prosaic emblems of air control into unique focal points of interest. In another respect the design exhibits great utility. The darker tones of the central motif in flat colors help to minimize reflection from the bright projection light beam.

"The auditorium walls curve gracefully in at the screen end of the theatre and, leading almost imperceptibly to the stage, present a transition area on each side, the bottom half of which is plain except for an exit and the top half of which has been decorated with a dream-like, unreal landscape in a light, carefree, holiday mood. The proscenium as such is non-existent, with the result that the main draperies help to give the patrons the psychological illusion that they are actually within the limits of the scene being projected on the screen. On the whole, then, our decorative efforts seek to convey a new world of dreams into the patron's consciousness and to do this by exploiting the psychological possibilities present in design, color and light."

The powerful emotional reactions engendered by decoration forms the theme of the Novelty Scenic Studios philosophy. In fact, they lead off with the basic premise that in any consideration of trends of design and blending of colors in theatres, the primary objective is to create an atmosphere which will be both cheerful and restful.

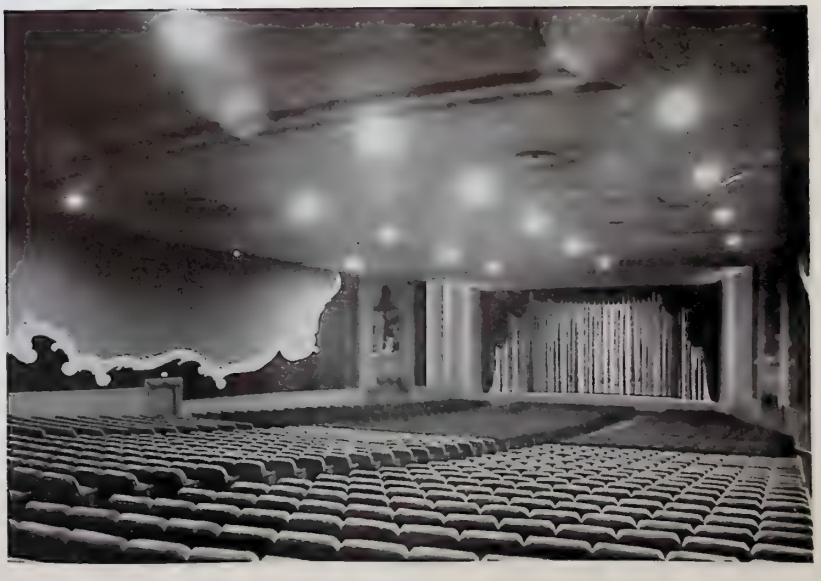


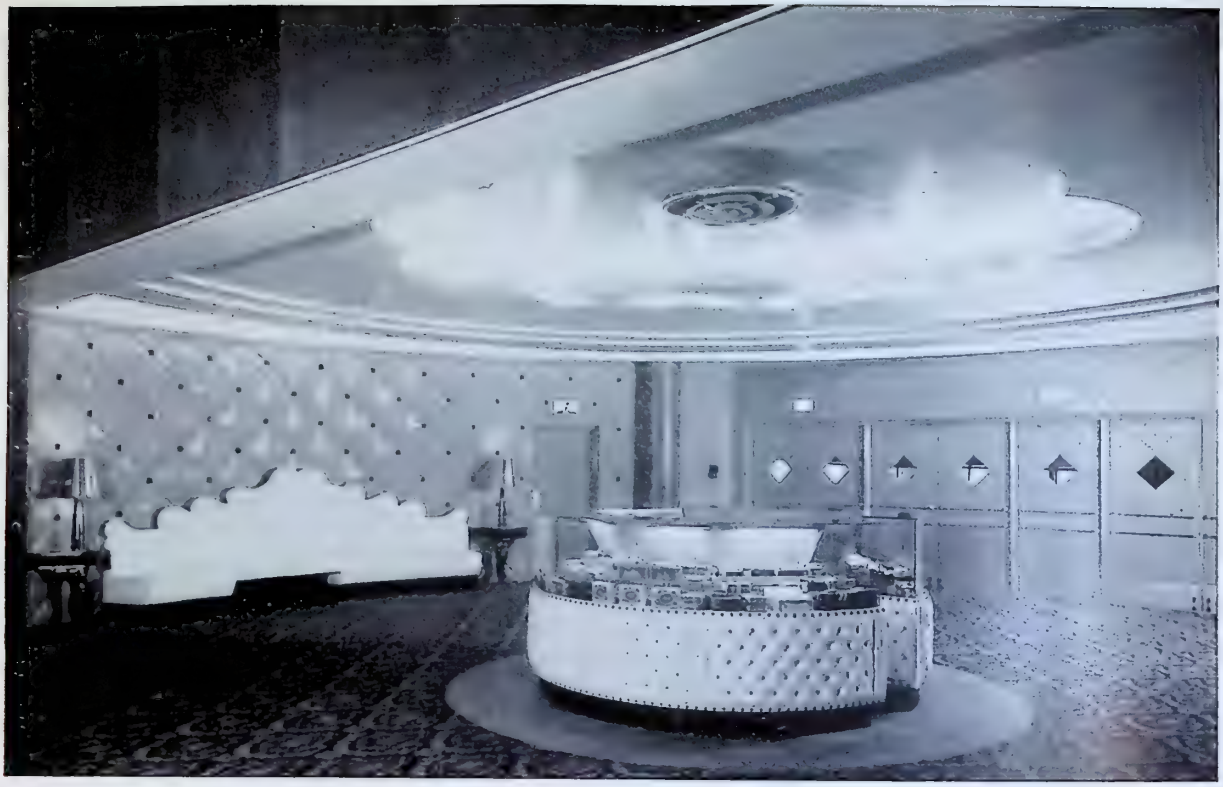
ABOVE may be seen the inner lobby, candy stand, and rear auditorium wall of the Copley, Akron, Ohio.

Mr. Kessler of Novelty Scenic Studios, Inc., gives the following views: "Now it is a well-established fact that decoration can definitely affect our emotions, either beneficially or adversely depending on the elements in the design, and their utilization. Harsh, discordant colors afford no ease or comfort. The best and most interesting effects are obtained by the generous use of soft, neutral colors. Deep, rich and vibrating tones, valued for variety, should be used sparingly and only for contrasts or for completing a color scheme. In short, decoration must provide a controlled environment in which the movie-goer—including Mr., Mrs., and Miss ——— can attain maximum relaxation and happiness. Theatre operators are becoming increasingly aware of this patron requisite and are beginning to do something about it.

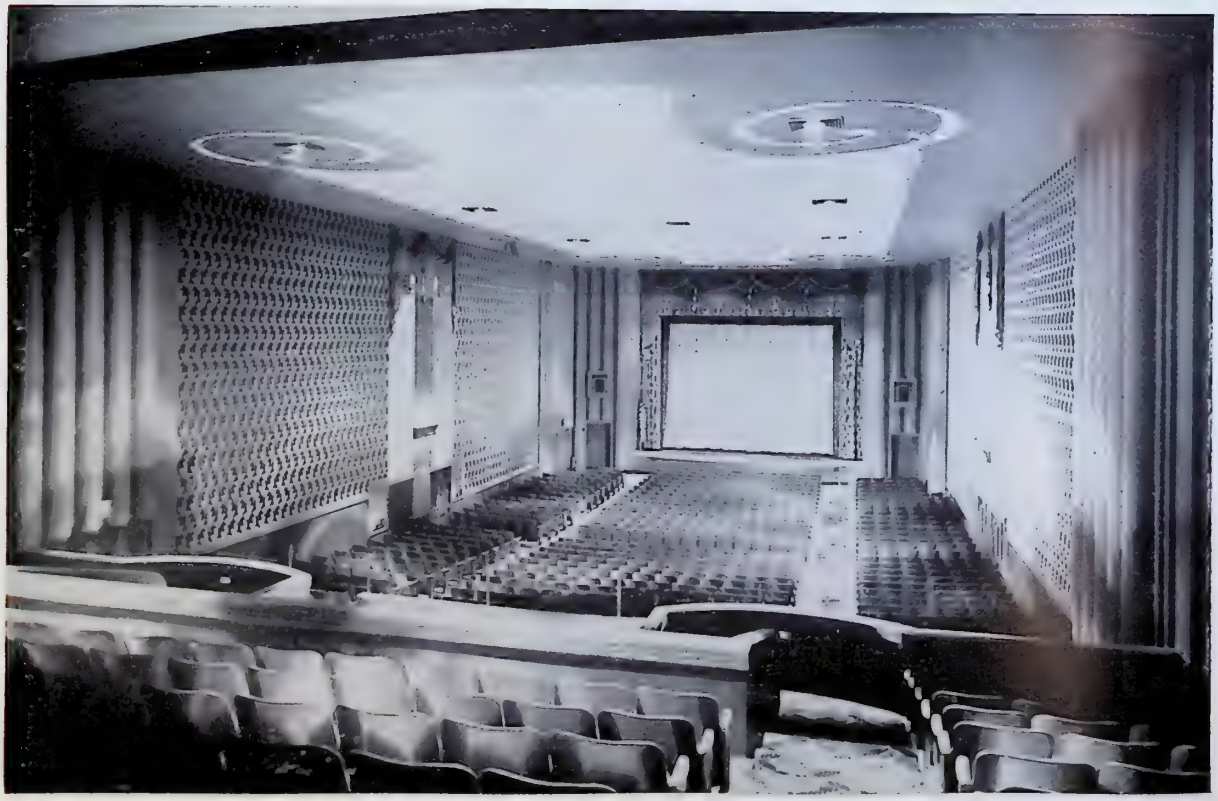
"In some fifty theatres decorated by us in 1948, we discovered wide acceptance for treating auditoriums and public areas in light, airy colors. The interesting fact is that the totally darkened and depressing theatre interiors of yesteryear are passing into the discard. With projection far brighter and clearer than it has ever been before, a modicum of visibility is advantageous in the auditorium.

NOVELTY SCENIC STUDIOS considers the Fairview, Cleveland, Ohio, an outstanding achievement.





ABOVE, the particularly luxurious foyer of the Fairview, Cleveland, Ohio. Of particular merit are the quilted, patent-leather effect plastic walls and the large baroque divan. Note also how the carpet installation accentuates the location of the candy stand. Below, the Strand, Erie, Pennsylvania, was submitted by Rambusch Studios and features interesting damask wall sections and modern lighting. This theatre is pictured elsewhere in this volume.



"In the Fairview Theatre of Cleveland, Ohio, the upper large areas of wall surface in the auditorium are covered with a pearl grey velour, while the lower portion of the wall is contrasted to the grey with a ruby red velour. Separating the two color areas is a running baroque ornament finished in bone white.

"The wainscoting is painted in slate grey and to continue the grey theme, the seats are covered with grey mohair. Relief is provided by green standards. At the stage end, columns flanking the stage, as well as proscenium members, are painted white. In interesting contrast, the front drapery on stage is ruby red satin in contour effect and the screen curtain stands out vividly in silver satin.

"A feeling of luxuriance arises in the foyer from tufted wall treatment utilizing grey patent leather covering augmented with red buttons for color highlights. Against the walls are benches covered with white leatherette. A rich carpet in red and grey provides a perfect foil for a domed recessed ceiling finished with silver leaf. Directly beneath the dome and centrally located in the foyer is a circular concession stand whose vertical outer circumference is strikingly finished in white tufted leatherette to match the wall benches.

"Ingress and egress gain added pleasure by the use of entrance doors padded and covered with grey Duran leatherette and upholstery buttons. From lobby to auditorium the central theme consists of getting the patron into a satisfied frame of mind by the use of pleasing decorative effects. Maximum relaxation and happiness have an excellent chance of being realized in such an environment."

For Mr. E. L. Gossage, president of Great Western Stage Equipment Company, the time is ripe for a renaissance in the utilization of theatre draperies. Although draperies have long been a part of theatre decor, first in the auditorium and then at the stage, it is only in the past twenty-five years that they have come into their own. At the same time there has been a decline in the use of bric-a-brac, ornaments and murals on the walls and in the lobbies, while on the stage gaudy painted drops and medieval sets are the exception rather than the rule.

Mr. Gossage states: "With the disappearance of the legitimate theatre in the majority of towns and villages and its replacement by the motion picture house, there seems to be a decorative trend towards graceful waterfall and contour curtains. These embellish the proscenium arch, behind which appears the necessary picture setting and close-ins to mask the screen.

"In the auditorium, graceful drapes are used as wall hangings for their beauty and for their excellent acoustical properties. Aisle entrances, exits, and even the box office are further embellished by rich, beautiful drapes, properly and gracefully made and hung. Whereas deep heavy colors of a somber nature were most popular in the past, the trend today is to use bold designs in bright colors. This is carried out both on the stage and in the auditorium with a rich and striking effect.

"Draperies, when properly selected by the artist and decorator, play an extremely prominent part in the furtherance of the new mood psychology in theatre lighting. Mood changing of colors by controlled lighting continues to gain in acceptance. And new theatres are using colors in their house lighting which, blended by dimming devices, are controlled to fit the mood of the picture on the screen. If desired, these colors can be pre-set and "played" at the specified time with quite impressive results."

In a terse, philosophic statement, one modern decorator meditates on his profession and the direction that theatre design is taking. "Theatre architects", says Mr. Harold W. Rambusch, of Rambusch Decorating Company, "are called anything but artists. They are usually hailed as engineers, physiologists, economists, politicians, and sometimes a courtier. This amazing phenomenon with the many titles has been having a hard time seducing investment capital for major building structures.

"Everyone you meet seems to agree, that in the vast output of the year 1948", continues Rambusch, "that piece of competitive virtuosity which we fondly call Theatre Technocracy was conspicuous by its absence. The reasons for this are many, and vary according to the source you are listening to. Some even whisper darkly about television, and rumors have reached the press of certain people buying into this new nuisance. However, ever since the days of the first circus, the basic pattern of the Theatre remains unchanged.

"Today's nationwide trend in decorating is clearly developing toward esthetics without clumsy masses. Today's interiors, a combination of functional and decorative surfaces, demand spindrift elegance with iron bound service ability. Today, decorators stress the use of monocolor architectural cosmetics. This gives the so-called sophisticated look and is usually heightened by a sharp accent in the color of the fabric."

Rambusch concludes with a belief that, "this will be a normal condition for the present, whether it's an old house with its feeble mimicry of past styles, or one of the latest structural designs in which the controlled lighting and ventilation elements have really come of age."

And so, as in horse racing, it is the different opinions, the different philosophies, and the different approaches, that breed finer and finer accomplishments.

GREAT WESTERN STAGE EQUIPMENT submits the main contour draperies of the Kansas City Music Hall.



Space Acoustics

A General Discussion as Presented Before the Atlantic Coast Section, SMPE, in New York on February 19, 1947

JAMES Y. DUNBAR
Johns-Manville Corp., New York, N. Y.

Summary — The relationship between the area, shape, and fitments of a sound studio or auditorium and their effect on sound quality is discussed. A probable evolution of music appreciation, from the pentatonic and whole-note scales of certain primitive peoples to harmony, as we know it today, is traced. Various methods of acoustical treatment of enclosed areas are described.

Sound is a form of pulsating or vibrating energy and in this discussion we are concerned with its behavior in an enclosure or restricted space. The behavior of sound energy in space, be it in a theatre, studio, living room or bathroom, is acoustics. The source of the sounds may be a vibrating string, membrane, column of air, or vocal chords. The air as a medium coupled to the source carries the vibration throughout the space until attenuated by distance, or absorbed by boundary surfaces.

Sustained sounds thus will fill a space and the intensity will grow by the addition of the various reflections until that steady state is reached when the energy of the source is balanced by the boundary loss, or absorption. If the source is suddenly stopped the residual sounds continue to reflect and to die away because of absorption.

The time taken for the sound level to drop 60 decibels is called the reverberation time. Some modern structures with hard surfaces have been known to have reverberation times in excess of 10 seconds. When we consider that we normally speak about three syllables per second and this extreme would mean thirty syllables running around the hall at the same time, we see what utter confusion and unintelligibility can result from excessive reverberation. Music in the same place would sound as though the loud pedal were on all of the time.

It is probable that the growth of modern music and our appreciation of it have been molded by the architecture of our buildings. The music of most primitive civilizations developed out of doors, as the homes of these early cultures were generally in tropic or semitropic climes. Their music has survived in the Near East and in the Orient largely in pentatonic and whole-note scales. Harmony as we know it cannot be obtained using these scales. They are best suited to heavy octave melodies, or staccato tunes for flute and strings built over the various drum rhythms.

An example of this use of ancient scales is in Japanese music today. Their traditional music is played out of doors, in shrines open at the sides, or in houses constructed of thin wood, bamboo, and paper so flimsy and absorbent as to simulate outdoor conditions. However, as the Japanese have gradually adopted the fireproof construction of the west, their modern music has likewise begun to make use of our scales and to take on the style of western music.

In the Christian era the march of civilization was toward the temperate zone of Europe. During the early centuries the church became the seat of culture and the main source of developing musical tastes. In the main, the churches, temples, and cathedrals were of much greater volume than other structures and they were enclosed against the more rigorous climate. Stone replaced wood as more enduring materials were used.

These factors aided in prolonging reverberation of sounds because reverberation depends on the amount of space enclosed and on the hardness of the surfaces. The notes overlapped. The more primitive scales when used in such places provided dissonances which were unpleasant to the ear. The Gregorian chants arose. The diatonic scale came into popular use, particularly in early operas. The hurdy-gurdy grew into a harpsichord, then into the piano and organ. Bach, Beethoven, Brahms, Stravinsky, Debussy, Ravel; changing scales, new instruments, great composers—and new architecture.

There are many of us who remember the early silent motion pictures where the sound effects consisted mainly of a piano and the quality of the music was of little value except to cover up the sound of the projection machine and to fill the time of changing reels and repairing film breaks. The legitimate theatres, concert halls, and churches inherently either had good or bad acoustics and little was done about it.

"Acoustics" was about as vague a term as politics, as little known and frequently as aimless. During this period miles of wire were strung up in auditoriums all over the country and some of it still exists. While it was one of the early attempts at acoustical treatment it is known that it did no good at all.

In the early part of this century Professor Wallace Clement Sabine of Harvard University put the acoustics of buildings on a scientific footing by establishing the relationship between reverberation time, room volume, and sound absorption.

Originally presented Feb. 19, 1947, before the Atlantic Coast Section of the Society of Motion Picture Engineers and published in the S.M.P.E. Journal, Oct., 1947

The subsequent treatment of many rooms and the use of articulation tests have determined that the optimum value of reverberation for a room is a function of its volume. Also, it was learned that a room used almost entirely for music should be somewhat more lively than one of the same volume intended primarily for speech.

As long as we depended mainly on the power of our own voices and musical instruments, most of our auditoriums were fairly satisfactory. The bad ones were usable even though they were annoying. But when the audion valve, vacuum tube, and triode came into being the course of the entire history of sound changed. We could then amplify the sounds we knew, thus putting many times the sound energy into the same enclosed space. In this way the old acoustical defects were multiplied.

Sound came to us in the form of radio-receiving sets, public-address systems, and sound motion pictures. People accepted the deficiencies of these new forms of education and entertainment as long as the novelty remained. But soon they were complaining about the old halls that boomed and growled with reverberation and echoes. They wanted something better. And as the sound industry improved acoustics had to improve with it.

We had had experiences in our homes with the sound-deadening effects obtained by the use of heavy carpets, draperies, and similar materials; however, little was known of the very few commercial acoustical materials existing at that time. So the attempts to deaden the noisy rooms and halls were generally made with home furnishings.

Accordingly, upholstered seats, carpets, and acres of draperies made their sudden appearance. Draperies ranged through theatrical gauze to monk's cloth and heavy velour folds alone, or applied over all kinds of felts, jute, and cattle hair. Quilts, blankets, and rugs, too, were hung up in attempts to subdue the bouncing sounds.

The same unstudied treatment was given to early radio studios, recording studios, and sound stages. The pickup and recording equipment were just about as rough in those days as the rooms in which they were used, and the noisy scratch of early synchronized films would make poor entertainment today.

All of this made a growing industry conscious of the need to learn more of the nature and behavior of sounds; speech and music in particular, for these are the intelligible noises which give instruction and pleasure.

It is obvious that the cure for reverberation is sound absorption; however, this cure can be excessive in two ways. Materials may be used which ab-

sorb only a part of the sound spectrum, or an excess of material may produce too much over-all absorption.

A room treated so as to produce selective absorption will give a very unnatural result. If the high frequencies are heavily absorbed the room will be boomy and the voice and instruments hardly distinguishable because of the loss of overtones. The degree of absorption should be about the same at all audible frequencies to maintain naturalness.

Many studios have been treated with material intended mainly for high-frequency typewriter or knife-and-fork noise, and the musicians have complained that these spaces are too dead, or too boomy. These studios have been corrected by taking out some of the high-frequency absorbent until a balance was secured.

The second excess is too much overall absorption, making the room approach zero-reverberations or "free-field" conditions. Here we go back to outdoor conditions for which our music is not suited. An acceptable balance must be secured based on study of old halls, long used and liked, or new ones thought to be better because of public acceptance of the results obtained in them. Knowing the upper and lower limits has been a great help in setting up proper reverberation times for various spaces.

When a room is to be used for recorded sound, both the originating studio and the hall should be treated slightly more than the rule calls for because of the additive effect of their reverberations. This is true of sound stages, motion picture theatres, and recording and broadcast studios.

Another fault commonly found in older theatres was echoes, or delayed repeats, of the original sound. These were generally caused by large domes, curves, and large flat surfaces. If a curved ceiling had focuses at the floor level or even multiples of this distance, disagreeable echoes were more than likely to spoil the seating down the center of the room. Most modern designers avoid these shapes and the domes of many of the old auditoriums have been heavily treated or new ceilings suspended under them with curves to kill the echo.

The modern theatre is now generally constructed of splayed surfaces which tend to straighten the path of reflected sounds passing to the rear. The back wall is not curved to focus near the stage unless it is very heavily treated, and upholstered seats are used to act as compensation absorption with small audiences. This last item keeps the reverberation from varying too much between full and empty conditions and does not require such a wide swing in gain to operate the horns.

The recording studio is a special problem in acoustics. First the sound should be so well distributed as to require only one microphone, or a very few in any case. If possible the reverberation should be quite flat over the frequency range except for the high end where it should rise.

The scratch and circuit noises are still intense enough to make very wide range recording a little unpleasing. If the high frequencies, that is, the overtones, timbre, and brilliance, can be built up excessively by reverberation and attenuated electrically back to normal level, a high signal-to-noise ratio will be maintained and the scratch considerably subdued. Such a treatment must be done carefully with as much attention to reflective surfaces as to the location and kind of absorbing surfaces.

Reflective materials are, generally, the floor which must be hard enough for its traffic, plastered surfaces, plywood, and transite. Plaster, plywood, and transite may be formed into polycylindrical and faceted or prismatic surfaces. These scatter sounds for better mixing. The deeper the offsets, the lower the frequencies which are affected. The sound-absorbing materials generally have a base of rock wool which will be covered by membranes of thin plywood, or perforated transite, to avoid too much high-frenquency absorption. For the same reason, great care should be taken to use sparingly such materials as carpeting and draperies.

The problem is virtually the same for the frequency-modulation studio, but it it not quite so rigorous for the more general amplitude-modulation studio because of the millions of limited-range receiving sets already owned by the public. Most of these run almost entirely on bass notes and almost twenty-four hours a day. However, as equipment is improved, all of these amplitude-modulation studios will have to be adjusted for high-fidelity sound.

There is another problem connected with all studios and places where we listen to sound. This is background noise. Practically all theatres are in urban areas with plenty of traffic noise all around, and their problem has been solved by omitting windows, using heavy walls, and deep vestibules, heavily carpeted, and lobbies with double doors. We must expect to endure some objectionable background noise when we sit in the middle of a thousand or so people. Fortunately, we become psychologically deaf to their presence when the show is interesting. This is not true of a real studio. A recording or broadcast that carries with it traffic and fire-engine noise, or the sound from other spaces in the building such as presses, elevators, and plumbing is not interesting. The background noise in a studio should be such that the intended silent moments are really silent and not distracting.

Such conditions can only be attained by sound isolation. This work bears no relation to the acoustics of the room itself and is a matter of construction and location. A single studio may be built far enough in the country to avoid all noise except thunder and airplanes, yet it still must be isolated from its control room and recording room to prevent feedback and pickup of machine noise. Most studios are built in the cities to be accessible to talent, service, and other requisites. Here they must contend with other building noises and sometimes subways, heavy traffic, and near-by manufacturing.

There is no such thing as absolute soundproofness; at least not on earth. A body at absolute zero floating in an absolute vacuum might be said to be absolutely soundproofed. Under special conditions we are able to hear sounds at some pitches down to a point a little below zero decibels, which is a sound intensity of 10 to 16 watts per square centimeter. However, as a person's body makes a noise of about 14 decibels just doing its regular work of pumping, digesting, and breathing we do not often experience quite below that.

Ordinarily a studio is considered good if the background level can be held to the twenties of decibels. Naturally, more soundproofing will be needed in a noisy than in a quiet location. Suppose we build a wall which will attenuate sound 40 decibels. If the level around it is 70 decibels, the level inside the walls will be 30 decibels; if the level outside rises to 90 decibels when a truck goes by, the inside level goes up to 50 decibels. In such a location more soundproofing will be required.

The foregoing indicates clearly that a proposed studio location should be examined before construction is contemplated in order to determine the problems to be expected from extraneous sounds. This survey should include observations of the background noise level, the amount of vibration in the structure, its mass and rigidity, and its allowable floor loading.

A building on Third Avenue in New York was recently examined in order to determine if it could be used for recording studios. Because of the scarcity of space a thorough examination was made of it. It was an old building with lightweight wood joist floors and ceilings which could not stand the weight of studio construction. The ceilings were so low that if we had used the necessary space for isolation and treatment, there would hardly have been room left for a bass viol. And besides, every time a Third Avenue elevated train passed by the whole building shook and the noise level rose to a point which made conversation impossible. We had to advise against signing the lease.

The weight of the structure is very important as the heavier the walls and slab construction, the better it resists vibration and passage of sound. A 12-inch brick wall is much more soundproof than a stud partition, as everyone knows.

The majority of the better studios are constructed of the "room-within-a-room" principle. The interior surfaces of the studio are "floated" away from the actual building floor, ceiling slabs, and structural partitions. This "floating" is accomplished by means of felt or spring isolators which carry or support the inner surfaces of plaster and floor slab.

Entrances to the studio are accomplished through soundproof doors. The ventilating system is flexibly connected to the room and the ducts are lined with sound-absorbing material. The electrical conduits must be flexible, too, where they enter. Heavy double glass is used for observation windows. Each glass is of different thickness or tilted out of parallel with the other to reduce transmission.

After all of this is done the isolated studio is ready for acoustical correction of the interior which means the control

and distribution of reflected sounds within it. This is accomplished, in the manner already discussed, by sound-absorbing material for different pitches of sound and reflecting material at suitable angles for distribution of sound. An example of a completed studio is Studio 8-H of the National Broadcasting Company in New York.

The associated control room is soundproofed from the studio to prevent feedback. It need not be quite so soundproof against outside noise as the studio itself, but it must have nearly perfect listening conditions for proper monitoring of a program, judging quality, microphone placement, and poor performance.

The higher the fidelity of the program, the more necessary it becomes to try for acoustical perfection in both the studio and the control room. A place used primarily for playing records is relatively unimportant compared to a studio originating frequency-modulation programs.

All of us are interested in television. A studio used for telecasting is in some ways quite different from those used for broadcasting and recording; yet they are similar in many respects to the present sound stages for motion pictures. Here, again, the first requirement is isolation from extraneous noise to prevent transmission of something foreign to the program.

In television as in sound motion pictures, two senses are being catered to, the sound and the vision must match. If an outdoor scene is being shot the sound should not be reverberant as though coming from a rain barrel; and conversely an indoor scene must carry a certain amount of room acoustics to make it sound real. The first condition is secured by covering practically all of the interior surfaces with a very efficient sound-absorbing material, to allow as little echo and reverberation as possible. In the second condition, when shots require reverberation, the reflection of sound is usually accomplished by reflective surfaces of sets and flies, or by adding reverberation through chambers or mechanical devices.

The reverberation chamber is a room with very hard surfaces. The echo chamber is one where a desired length of sound path may be used between microphone and speaker. One mechanical device is composed of a series of long damped springs with the alternate ends mass-loaded and clamped for reflection of mechanical vibration induced by the signal. These devices may be used as a parallel signal path so as much of their effect may be added to the signal as is desired.

A television studio should have a ceiling height capable of accommodating place and mount special lights. The ventilating system must be adequate to handle the increased load caused by the lighting. Usually catwalks are used to heat from the intense lighting. The whole effort is to bring as many scenic conditions as possible under a protective roof and within soundproof walls and close to the elaborate equipment needed for pickup and telecasting a program.

In all of these enclosed spaces we are attempting to produce programs and entertainment which will be the most natural and pleasing to the greatest number of people. For this reason sound coming with television and with motion pictures, too, should match the scene conditions. If the actors are evidently in a living room their voices should sound as though they were in a normal-sized room and not as if they were in the bathroom, or out in the woods. Music, too, should have its normal reverberation and not give the impression that the violins are stuffed with cotton.

This whole science of architectural, or space acoustics, as we have called it, is a rather simple thing. It is just a matter of common sense to have our studios treated to give them natural sound and to have our theatres designed so that everyone in them hears the sound as it should be. If the rules previously stated are followed there should be no reason why this goal cannot be attained.

IS IT PRACTICAL ON MAIN STREET?

An unusual seating effort, in order to gain a plush reputation, was tried out recently at the Park Avenue, New York. Nationally known decorator Dorothy Draper was out to prove that the comforts of the best living room could be brought into the theatre auditorium, and, as a direct result, she started with the living room chairs.



Much is to be said for and against this effort in modern seating, but for practical theatre industry considerations, future maintenance is the most important. Regardless of how well constructed or strongly sprung and upholstered, it does not seem reasonable to suppose that such "love seats" can equal the enduring strength of a steel theatre chair. Future reupholstering of such large covered areas is still another facet, and we'll let the pest control and exterminator companies tell us of the headaches attendant to such deep gussets and sewn pads.

The Park Avenue is an unusual theatre catering to a most unusual upper-crust audience and charging an admission scale that is in accordance with it. The only dirty shirt or soiled linen to cross its threshold should be on the back of a service man, and not a patron. Referring to such an audience,—"on them it looks good!"

To sum it up, as most subjects relating to the theatre must be summed, there is no questioning it's Park Avenue comfort, but is it practical on Main Street?

Suggestions for Better Theatre Lighting

Proper Lighting Enhances Patrons' Comfort While Providing an Attractive Atmosphere

STANLEY McCANDLESS
Professor of Lighting at Yale University and Consultant to Century Lighting

In a broad definition, the theatre includes any structure devoted to a performance before an audience. To achieve the ultimate goal, the lighting of the stage and the auditorium are two of the basic problems but, in addition the lighting of the public places and displays must be considered.

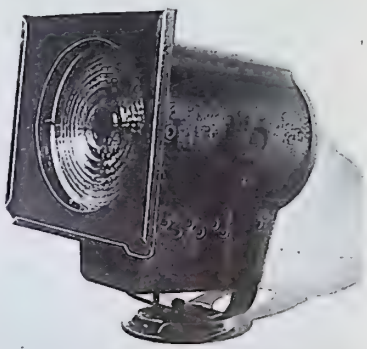
GUIDING PRINCIPLES

The type of performance for which the theatre is designed—be it motion pictures, legitimate productions, opera, concerts, and the like—and the size—in general, seating capacity—determine the special functions of lighting and the extent of the layout. Although these vary considerably, it is possible to lay down certain principles which can serve as a guide in the selection, installation, and use of lighting equipment for auditorium lighting.

Visibility—Provide adequate illumination for circulation, program reading, note-taking (at lectures) or seeing the performance without creating distracting shadows or competing brightnesses in the normal line of vision. Equip the house lights with dimmers so that the general illumination can be reduced at the time of performance.

Comfort—Audiences should be put at ease, relaxed. No glare should be tolerated.

Composition—The lighting layout (providing not only illumination but carefully controlled distribution and even color) should be sufficiently flexible to give the most appropriate visual effect for each use to which the auditorium is put. Accent should be on the picture screen, stage or platform during the performance, and on the aisles, seats and decorative features of the auditorium before and after.

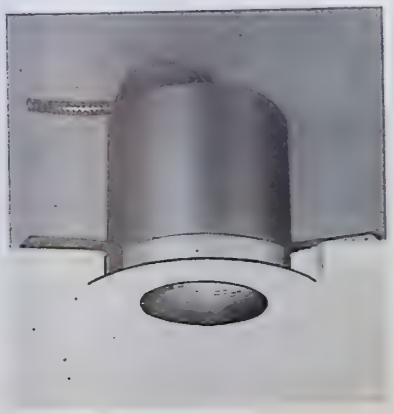


THE 1,500-WATT SPOTLIGHT, with an 8-inch lens, produces an efficient, soft-edge beam which can be varied from 12 to 50 degrees, depending on the amount of flood lighting that is needed.

Atmosphere—The mass feeling of the members of an audience is largely due to what they see in their surroundings. A gloomy place is certainly not exhilarating. Music is probably best received in a softly lighted space. Color, texture and form can play an important part in creating an appropriate atmosphere and a change in intensity, color and distribution in harmony with the program of performance can create a visual effect more in keeping with each occasion than a fixed set-up.

Much of the charm and attractiveness of the theatre lies in the first reaction of the customer to his surroundings. The public spaces are included to promote his comfort and, in the same respect, the lighting should not only enhance his comfort but provide an attractive atmosphere.

TILTED FORWARD AT 10 DEGREES, this lamp with spread roundel provides circulation lighting independent of walls and is valuable for lighting the seating area in motion-picture theatres.



FRONT AND LOBBY LIGHTING

To a large degree, the usual standards of comfort and safety should dictate the lighting of the public spaces. In addition, attraction (salesmanship), even glamour, can be provided by lighting depending upon the owner's pocketbook—and taste—almost without limit more effectively by lighting than any other means. The most exotic architecture and lavish materials are almost completely lost with poor lighting, whereas brightness, color, and variety of effect in light can enhance even the humblest theatre.

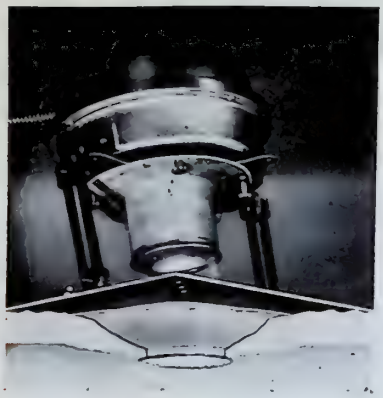
Space is inadequate here to describe the various means of achieving these results from a decorative point of view. Functionally, the lighting starts with the exterior display in the form of marquee signs and floodlighting. The latter can be more effective as an attraction from a distance than any sign, provided the building can be seen from a reasonable distance and that it has been designed to incorporate artificial lighting as a definite part of its nighttime appearance.

The walk under the marquee should be brightly illuminated by downlights or indirect coves, or perhaps a myriad of small exposed lamps (metropolitan centers). Legitimate theatres and concert auditoriums should be more dignified, relying less upon the need for attraction than upon the function of safety and circulation.

From here on into the auditorium itself, the lighting should be stepped down in intensity to accustom the eye to the lower levels usually encountered in the auditorium itself. This can be accomplished by built-in downlighting or any other means which will provide adequate illumination for circulation. On the way there may be illuminated displays, murals, wall pockets, or cove lighting which will supply the general lighting necessary to keep the space luminous. We should not forget the value of excitement inherent in the crystal chandelier; not that crystal chandeliers in themselves are necessary, but the glitter and glamour of this device that has always been associated with the theatre can be incorporated in other ways in the decorative scheme.

LOW SURFACE BRILLIANCE can be achieved with this type of downlight, which is set flush in the ceiling and has a sharp cut-off at 45 degree. The light is useful in general illumination.





FLUSH PINHOLE-TYPE SPOTLIGHT is easily concealed. It projects a shaped beam through a small aperture. It finds special use underneath balconies, framing exits, displays, and so forth.

AUDITORIUM LIGHTING

These conditions can be met most readily by employing the following groups of lights. They are listed more or less in order of importance depending on the varied functions of the auditorium. Some may be omitted or combined. For instance, downlights are essential where there is any note-taking or program-reading, but they are of doubtful value in a motion picture theatre, except over the aisles.

The following suggestions should be carefully related to the uses of the theatre. Auditorium lights are far less important in the motion-picture house than in the legitimate, concert or lecture auditorium where the performance is not continuous. However, there is good reason to believe that there would be far greater eye comfort in the motion-picture theatre if the sharp contrasts of the picture screen were tempered by a low level of general illumination (which is shielded carefully from the screen) were maintained during the showing of pictures. Certainly the problem of getting in and out of seats would be simplified and the customary gloom of the motion-picture theatre dispelled for good and all.

Downlights

Downlights are usually flush-ceiling units of inconspicuous proportions and brightness. They should give a general illumination at the seating level of 10 to 20-foot candles and may be tinted in color although with incandescent lights this decreases efficiency. The distribution should be downward within a controlled cone that is not in the normal line of vision (generally slightly forward over the entire seating area, preferably not on the walls). There should be a sufficient number so that shadows are reduced to a minimum.

General Illumination

Downlighting alone tends to create a dark ceiling and a gloomy atmosphere. A dim, indirect lighting which illuminates the ceiling (and perhaps the walls) is an essential combination with downlights. These lights may be colored to create variety and atmosphere.

Wall or ceiling lighting is generally provided by a properly designed cove. It should project the light well out across the ceiling, without permitting too much light to fall on the near wall thus causing a sharp brightness contrast between the cove line and the wall above.

A properly designed cove light is one which does not reveal itself. After all, its function is not to provide illumination so much as to keep the ceiling from being dark and to keep the auditorium from having a gloomy atmosphere. Fluorescent lamps of the cold-cathode variety can be used for cove strips because they can be dimmed reasonably well. Hot-cathode (standard fluorescent) and Slimline tubes can only be used where no dimming is required.

Exit and Aisle Lights

Exit lights are required by code in most places of public assembly.

Aisle lights are an added refinement, even required in some states, but they should be well shielded so as not to interrupt the view of the stage or to provide too much illumination during a scene black-out or the showing of slides or films.

A special set of downlights covering just the aisles or better ultra-violet projectors and fluorescent carpets can be used.

Decorative Elements

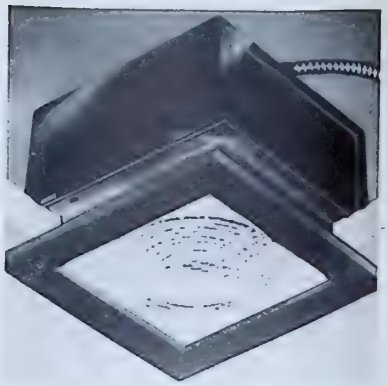
The foregoing paragraphs are devoted to functional sources of illumination. The architect may wish to have luminous areas, murals, bas-reliefs fabric crystal or metalic details, as part of his architectural decoration. These should be designed, however, to fit into the scheme so as not to be distracting as the average lighting fixture is today.

Under-Balcony Lights

Inasmuch as the ceiling of the balcony is generally low, it may be necessary to depart from the use of downlights and depend upon a cove or luminous flush ceiling panels which do not distract from the occasion. However, with the present equipment available, this form of lighting can never be as effective as downlights plus general lighting.

FLUSH-TYPE EXIT SIGN has a hinged door for easy access. While exit lights are required by almost all local codes, aisle lights are an added refinement, although in some places, these, too, are required by code. Aisle lights should be shielded so as not to interrupt the view of the stage or to provide too much illumination during the showing of slides or motion pictures in the auditorium.





UNDERNEATH THE BALCONY, a flush, wide-angle diffusing lens unit, such as shown here, can be used for general illumination of the audience area. Several of these would be required.

LOUNGE LIGHTING

The lounges should be lighted softly very much like a club room and yet an added attraction particularly where colorful gowns may be parading but would be to put in an occasional downlight to make the person appear as a picture for a moment in passing.

Powder rooms should have well lighted mirrors, otherwise, the lighting may be soft and pleasant.

STAGE LIGHTING

Stage-lighting equipment is determined by the physical proportions and employment of the playing space. If it is to be used only for speakers and concerts or choral work, the speaker lights and some concealed over-head lighting for the musicians should be considered. If it is to be used as a stage, flexibility becomes the important criterion for choosing a layout. In general, all lighting equipment, except perhaps the footlights, borderlights, and cyclorama lights should be portable. Even these, if portable will be able to serve many purposes when there is no need for them to be used in the normal manner.

This fascinating and complicated problem can only be touched upon here. The most elaborate layouts are to be found in the larger presentation houses devoted to extravagant stage shows. A more conservative but equally flexible and carefully selected equipment is used in a legitimate theatre. Concert and speaker platforms need only the most elementary layout to provide accent on the conductor, soloist or speaker and adequate illumination for the musicians so that they can read their scores. In general, stage lighting can be classified into a few groups of equipment plus a flexible type of switchboard to control the intensity of each or all of the lights in use.

Acting area lights are generally spotlights directed onto the acting area to give accent to the actor. They may be in the form of high-intensity arc lights located in the picture booth (providing the most flexible control of direction and color in the hands of a competent operator).

Ellipsoidal reflector spotlights can be mounted on the front of the balcony or in ceiling ports in the ceiling. These units can be carefully matted or framed to deliver their entire light output to any part of the stage wihout spilling in the audience.

The basic layout depends upon the number of areas at the front of the stage to be lighted separated (generally three, with two spots from opposite diagonals on each). The number of units depends largely upon the wattage, related distance of throw and the flexibility of color control desired. This may vary between two lights on the center area to light the conductor, soloist, or speaker to as many as 36 or more to give the proper intensity and flexibility of color.

Behind the curtain, mounted on the first pipe, may be an equal number of spots, generally of the Fresnel type, to light the upstage acting areas. Likewise, at this point three color borderlights to give toning and blending over the acting area space and three color footlights to give color tonality over the seating comprise the most important units used on the stage. Beyond this there may be a number of borderlights or large floods to light backdrops or cycloramas both from above and below and a certain number of special instruments to provide effects of tormentor or boom lighting in the form of spotlights or projectors from the side of the stage and special projection apparatus to give patterns of light on the backdrop or wherever desired.

This schedule of lighting equipment for a medium size stage is presented to indicate the number and types of instruments which comprise a satisfactory layout. This may be curtailed or extended depending upon the use of the space and the wattage must be related to the distances involved.

SWITCHBOARDS

As indicated previously, lighting equipment is useless without a certain number of dimmers to permit (1) color mixing and balancing to create a well modulated static picture and (2) individual or group dimming or brightening at some course of the action of the play, as for example, sunsets and dawns.

THE ELLIPSOIDAL REFLECTOR SPOTLIGHT has built-in shutters, permitting a round beam of high-intensity light to be shaped into any desired geometric figure for the best possible effect.





FOR ILLUMINATING wide areas at close range, a small efficient floodlight, such as this one, is suggested. Equipped with an easily-mounted stand, it is designed for a wide variety of uses.

In theory, each circuit should be subject to separate dimming, but inasmuch as dimmer boards are relatively expensive, a compromise which permits the grouping of several circuits on one dimmer is a possible alternate. A necessary aspect of control with a limited number of dimmers is the ability to inter-plug any one or group of load circuits to any dimmer control.

Dimmers are built into switchboards which are equipped with switches, fuses, pockets, and such mechanical features as interlock and slow motion control for mass dimmer movement.

Resistance Dimmers

Resistance dimmers of the slide or non-interlocking plate type in small sizes are relatively inexpensive, but they operate effectively only when loaded to their rated capacity (in watts) and are not useful for group dimming unless mastered by (fed through) a large dimmer.

For the medium theatre, the schedule would indicate that fifteen 500-watt, six 1,500-watt, and six 2,000-watt dimmers will handle the minimum loads except for cyclorama lighting which requires at least three 4,500-watt and three 6,000-watt dimmers. These are essential. The number permits no leeway if all the instruments are to be subject to dimming.

Now that the auto-transformer type of dimmer is available, it is no longer necessary to be concerned with matching the wattage of the load with the exact rating of the dimmer as long as it is not over-loaded. The auto-transformer type of dimmer will dim any load up to its rated capacity. This is not true of the resistance dimmer which must be loaded to at least one-half its capacity before it dims effectively.

Auto-Transformer Dimmers

As an alternate to the resistance dimmer, a basic schedule of auto-transformer dimmers would be twelve 4000-watt and six 6000-watt. Unfortunately, the standard theatre auto-transformer is not made in small sizes. However, it is available in 500- and 2,000-watt sizes in a form not specifically built for theatrical purposes. The 4000- and 6000-watt types are standard for theatrical purposes.

It should be pointed out that the auto-transformer requires alternating current and that the number of dimmers listed are in addition to the dimmer or dimmers required for house (or auditorium) lighting control. Whether the auditorium is equipped for stage or merely as a lecture platform, it is desirable to have the downlights, the indirect and speaker lights controlled by separate dimmers.

Electronic Controls

Electronic controls with preset and fading facilities are desirable for experimental and the more elaborate type of auditorium but they are apt to be more expensive than practical for most theatres today.

SUMMARY

Auditoriums are best lighted by downlights, indirect lights, and acting area lights.

If stage lighting is involved, it should be sufficiently flexible to meet the various conditions imposed by the vast variety of demands placed upon it by modern production methods.

A budget which includes only footlights and borderlights for the stage is a waste of money.

If the budget does not allow for a well-equipped stage, forget it and concentrate on the needs for a good auditorium with a concert or speaker's platform.

If the showing of slides or pictures is not involved, the shape of the auditorium can be that of an amphitheatre. Even a flat floor and high platform are acceptable.

A PROJECTOR with a parabolic reflector unit produces a narrow-angle beam of high-intensity light. The lamp is easily mounted and can be arranged so that it projects at any desired object.



Theatre Dimmers

Analysis of All Available Theatre Types and Their Recommended Installation and Maintenance Practices

By Daniel M. Rollins
Ward Leonard Electric Company, Mount Vernon, N. Y.

Today the word "theatre" no longer applies solely to the presentation of drama, but covers a wide variety of structures designed for the entertainment and education of people. By far the greatest number in any one class is the motion picture theatre, of which there are many distinct types varying from the large presentation houses to the small news-reel theatre. In all of these there is a common necessity for adequate and properly controlled lighting.

The primary purpose of the motion picture theatre is to present the pictures distinctly and efficiently under pleasing and comfortable conditions. These requirements apply from the moment the patron enters the lobby to the presentation of the picture in the auditorium. The selection of pleasing decor, comfortable seats, good ventilation and last but not least, good lighting, are essential to the success of the theatre.

Good lighting involves, first, the installation of proper and adequate lighting instruments and fixtures, and second, means of adjusting the tone, quality, and quantity of light. The change in auditorium lighting intensity before and after the show and during intermission to the low level of picture lighting is an elementary requirement, but the adjustment of proper lighting intensity begins in the lobby and ends at the screen.

A gradual transition from the outdoor intensity to the auditorium lighting level is necessary to prevent eyestrain, discomfort and to prevent accidental falls and injury to the patrons. As the outdoor intensity varies from day to night, from season to season, and with the weather conditions, the inside intensity should be adjusted accordingly.

The addition of color in the lobby lighting is most desirable. A warm, cheerful interior is suitable on a cold, stormy day, while a cool light makes a hot day more endurable. Likewise, in the auditorium, variations in screen intensities with the different pictures comprising the program require adjustment of the picture lighting to prevent objectionable contrasts. The brighter the screen, the higher may be the picture lighting intensity.

The theatre dimmer is the device designed especially to provide the adjustment of these lighting intensities as required for any particular condition. As these requirements are present in every type of motion-picture theatre, it is essential that some type of dimmer equipment be installed so that every theatre operator can provide proper, well balanced, comfortable illumination for his patrons.

BELOW, a small individual resistance type dimmer suitable for efficient control of theatre lobby lighting.



Types of Theatre Dimmers

There are three basic types of theatre dimmers, namely: the resistance type, the Autrastat (autotransformer) type, and the reactance type. All of these have their particular features which make them more or less desirable for particular types of installations.

The resistance dimmer consists of resistance wires attached to brass contact buttons over which a moving contact arm passes in operating the dimmer. All of these are imbedded in Vitreous enamel to protect the wire, and are supported by a steel stamping. A reduction in light intensity is obtained by introducing more of the resistance of the dimmer in series with the lamps, causing a voltage drop on the dimmer and reducing the voltage applied to the lamps. The energy consumed by introducing this voltage drop is dissipated as heat.

The amount of dimming will depend on the value of the lamp load connected to the dimmer. It is therefore essential with a resistance type dimmer, that it be properly loaded to secure the maximum range of light control. Ratings are available in single units up to a maximum of 3600 watts. For lamp loads of greater value, resistance dimmers are connected together mechanically but are electrically independent, and the lamp load must be divided so that each dimmer plate carries its proportion of the total load. The resistance type dimmer is the only one of the three types that is suitable for use on either direct or alternating current. Therefore, on direct current installations the resistance type dimmer must be used.

The resistance type dimmer is the lowest in cost of initial installation. However, due to the fact that the reduction in voltage results in a loss of energy in the form of heat, the overall efficiency of the lighting system is relatively low.

The Autrastat (autotransformer) type of dimmer is essentially a continuously tapped transformer with the taps carried out to brass contacts over which a contact arm with metallic shoes moves in the operation of the dimmer. The

winding, the contact buttons, and the interconnections are all embedded in insulating cement and supported by a metal base plate. The reduction in voltage on the lamps with this type of dimmer is secured by direct transformer action and is not dependent on the load connected to the dimmer. This feature alone makes the Autrastat a more desirable unit, as the actual lighting in the theatre may be changed from time to time and it can still be properly controlled by the same dimmer. Because of the transformer action, the actual losses in heat are very low and the operating efficiency of the lighting circuit is high even at very low intensities. Individual units with maximum rating as high as 8000 watts are available, thereby reducing the number of dimmers that might be required for the control of the auditorium lighting.

The Autrastat dimmer is higher than the resistance type in the initial cost of installation but because of its high operating efficiency, the difference in initial cost is quickly saved by the reduction of power consumed in the circuit.

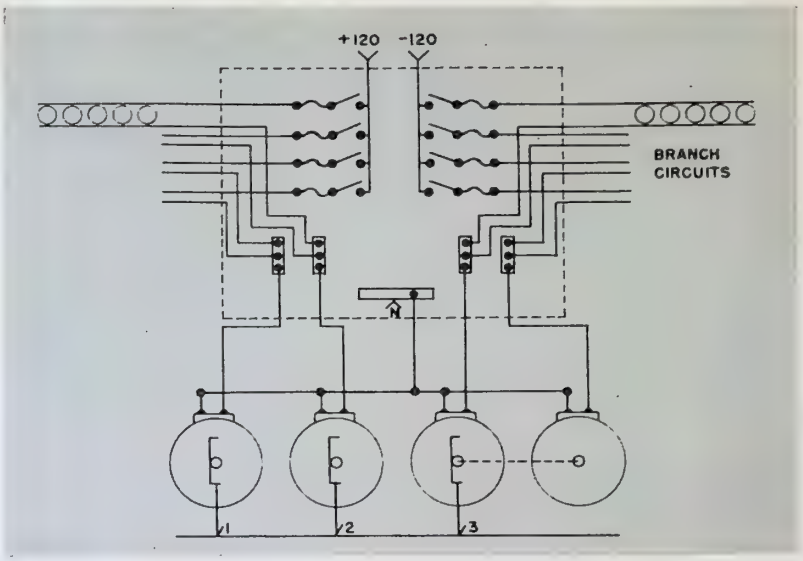
The reactance type dimmer consists of a magnetic element connected in series with the lamp load. Some controlling device must be provided to regulate the impedance produced by this magnetic element. In the modern type of reactance dimmer installation this is usually an electronic control unit having miniature pilot controls. This means that the reactance type dimmer is essentially for remote control installations.

With this type of dimmer the amount of reduction of the voltage applied to the lighting load depends on the load connected to the dimmer, somewhat in the same manner as the resistance dimmer. However, a regulating characteristic is included in the control element, permitting a wide range of variation in the connected load with equal dimming results. As the reduction in voltage is obtained by reactance voltage drop, little loss occurs in the magnetic unit in the form of heat. The system operates at high efficiency closely approaching the efficiency of the Autrastat type dimmer. Reactive units of large capacity can be manufactured, reducing the number of units required in any installation to a minimum. Individual loads of 14,000 watts can easily be controlled by one unit with the miniature pilot device.

Because of the auxiliary devices required with this system, the reactance type dimmer is the highest in initial cost, but on the other hand, there are no moving contacts carrying the heavy lighting current, therefore maintenance on this type of installation is minimized. The electronic tubes used in this circuit have been selected for long useful life to reduce tube replacement costs to a minimum.

Selection And Location

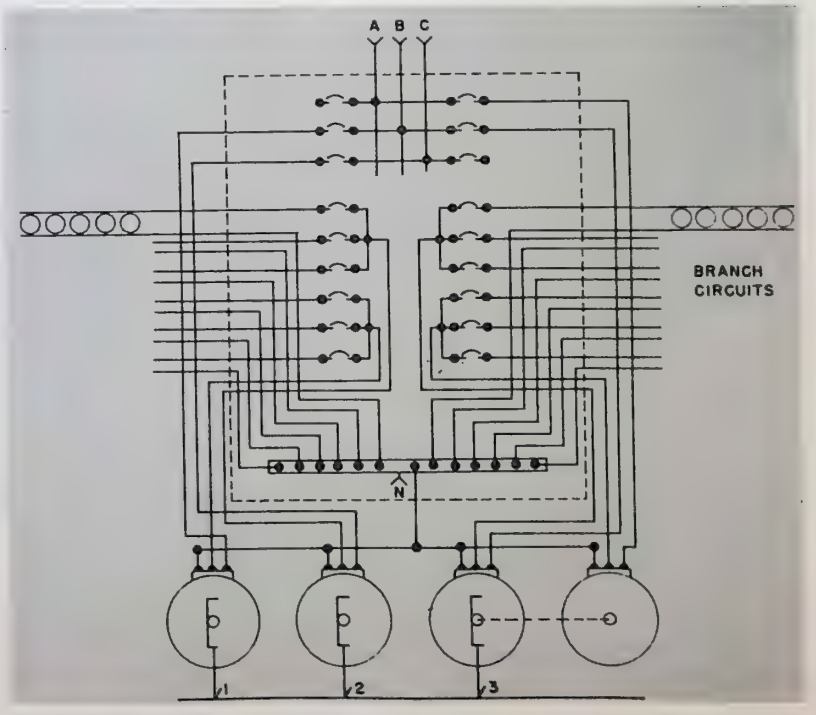
The type of dimmer equipment best suited for any particular installation can be determined by considering the various factors involved. First of all, a comparison should be made between the relative cost of the various units. This should include a balance between the initial installation cost and the operating cost, which is greatly affected by the efficiency of the various types of dimmer equipment.

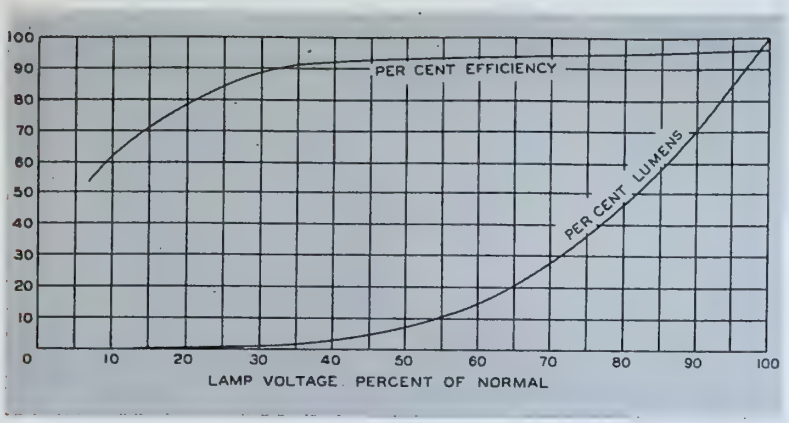


ABOVE is a wiring diagram for resistance type dimmers of the single phase, three wire service, two wire branch circuit type. The dimmer is connected in the neutral return of the branch circuit. For lamp loads of more than 3600 watts, resistance dimmers are connected mechanically but are electrically independent, and the load must be divided so that each dimmer plate carries its portion of the total load.

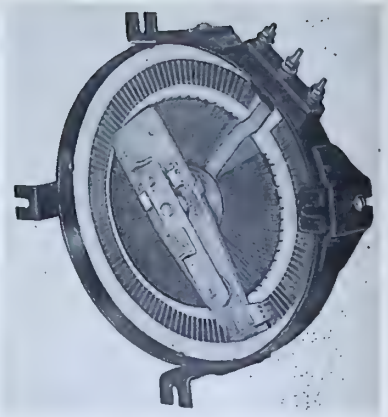
The next consideration is the character of presentation for which the theatre is designed. If limited solely to motion picture presentations, the simplest type of equipment is obviously adequate. However, in some community theatres provision is made for the possible use of the theatre by local organizations for meetings, benefit shows for charitable organizations, and presentation of amateur theatrical productions. These obviously require some form of stage lighting and additional dimmer equipment to

BELOW is a wiring diagram of an autrastat dimmer of the three phase, four wire service, two wire branch circuit type. Note—circuit breakers are ahead of autrastat dimmers in addition to the branch circuit protection. This dimmer, known throughout the electrical industry as an autotransformer, has been a favorite with theatremen because of its provisions of flexible and efficient lighting at low cost.





THE EFFICIENCY CURVE of an autrastat dimmer is presented above. Voltage reductions on lamps with dimmer types of this kind are secured by direct transformer action and not on connected load.



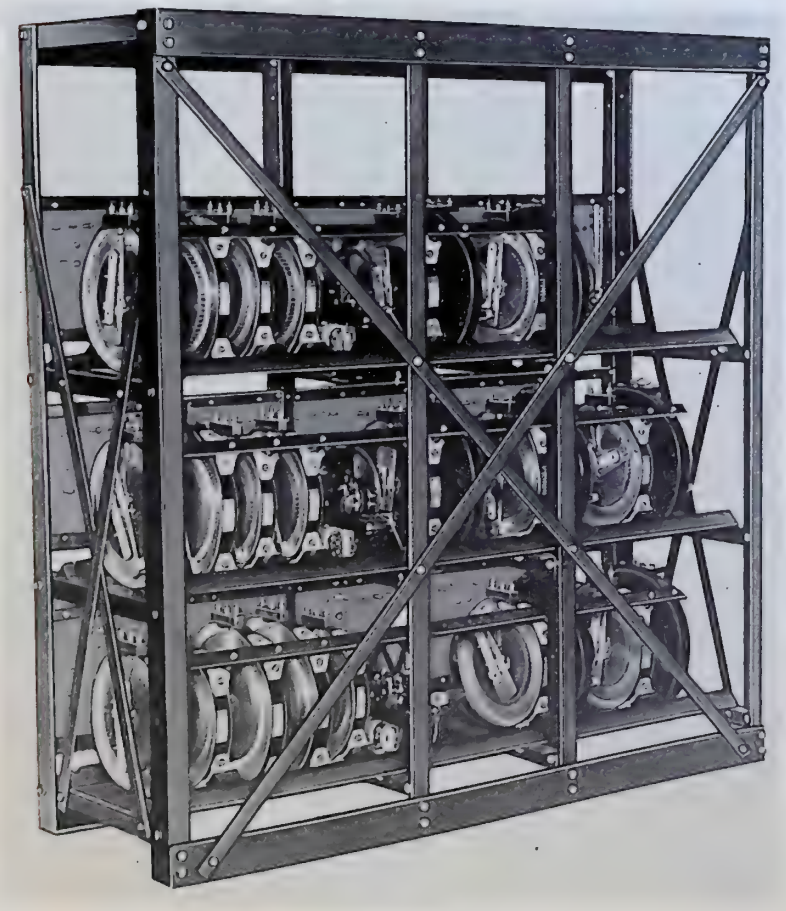
ABOVE may be seen an 8000 watt autrastat dimmer of radial construction, brass contacts exposed.

adequately control the lighting on the stage.

These considerations usually indicate that for the small theatres the resistance type dimmer is perfectly adequate and costs the least to install. In extremely large theatres or where complicated productions may be presented, the reactance dimmer with electronic control should be given serious consideration. However, for the average community theatre the Autrastat type of dimmer provides the most efficient and flexible lighting control at moderate cost.

Individual dimmer units are usually sufficient for the control of foyer and lobby lighting. These may be mounted in cabinets located in the Manager's office or in a storage room adjacent to the theatre entrance, so that the intensities can be adjusted to suit the occasion. If no particular space is available for the dimmer equipment which can be reached for operation of the unit, it is possible to provide remote operation by means of a motor drive and to install the equipment at some point at which the electrical wiring and conduits are terminated. Control stations would then be located either in the Manager's office or in the lobby, controlled by the Head Usher.

A TYPICAL MOTOR OPERATED AUTRASTAT dimmer bank for a large theatre may be seen below. Such a bank would be capable of serving a number of house lighting circuits as well as stage play needs.



The auditorium lighting should be controlled by dimmer equipment of sufficient rating to dim the entire auditorium lighting. If color is included in the lighting arrangement, separate controls for each color of house lighting should be provided. Furthermore, it is desirable to segregate the lighting in the rear of the auditorium and place it on a separate control so that slightly higher intensities can be made available in this section, thereby improving the gradual transition from the outdoor intensities into the main auditorium.

In theatres where there is no stage or no intention to provide any form of stage lighting, the auditorium dimmer equipment can be located so that it may be operated by the projectionist in the projection booth. The National Electric Code does not permit this apparatus to be installed directly in the projection booth. However, it can be located in the motor generator room if it is adjacent to the projection booth and the operating handles may be carried through the wall into the booth for operation by the projectionist. An alternate possibility, depending on space available directly above the projection booth, is to arrange the dimmers with extended rods and operating handles down through the ceiling of the projection booth, against the front wall and directly over the observation portholes. This arrangement is more convenient for the operator as he can manipulate the dimmers without moving from the projection machines. Duplicate control levers may be provided at each machine for convenience in operation.

It is also possible to locate the dimmer equipment on the auditorium floor level in a space convenient for the Chief Usher to manipulate them. This installation, however, does call for close cooperation between the projectionist and the Usher, so that the lighting cues are clearly identified. An objection to such installations is that it is not always possible for the Usher to be available at the required time.

If some form of stage lighting equipment is installed in the theatre, the dimmer installation may still be made as described previously. However, if the cost of additional personnel is not a serious factor, the dimmer equipment should be mounted on the stage in the wings together with the panel board or a switchboard controlling the theatre and stage lighting. The conventional type of combination switchboard and dimmer bank is the most modern and efficient way of making this type of an installation, as all of the controls for the circuits involved in the installation can be manipulated by the switchboard operator.

Remote Control

Where adequate space for installation of manually operated equipment is not available or where the additional cost of remote operation of the dimmer equipment is not a determining factor, motor operated resistance or autotransformer dimmers provide a very desirable type of installation. This has the advantage of locating the dimmer equipment at the load centers where the electrical wiring and conduit layout is reduced to a minimum. Control stations for the remote dimming and switching operations can be located in the projection booth with multiple stations at each porthole. Additional control stations can be located in the rear of the auditorium and in the Manager's office. Obviously these control stations can be kept small in size and occupy little additional space in the already crowded projection booth.

Various types of control stations can be supplied, depending on the complexity of the lighting system and the results desired by the theatre owner. Normally a two-button momentary contact push button is furnished for each motor drive; one button causing the dimmers to move in the "bright" direction, the other in the "dim" direction. The motor will operate as long as the button is held depressed or until the end of dimmer travel is reached. If this type of operation is not desirable a three-button control station can be furnished having "bright", "dim" and "Stop" buttons for each motor drive. Momentarily pressing the "bright" or "dim" button will initiate operation of the motor drive and it will continue until the "stop" button is pressed at the desired intensity or until the end of dimmer travel is reached. In both cases limit switches are provided on the apparatus to stop the motor at the end of dimmer travel and prevent damage to the apparatus.

A more elaborate type of control station can be installed using miniature dimming controls having small slot closing levers having graduated dials so that the direction and range of travel of the dimmer motors can be directly determined by moving the miniature dimming control. Still a further possibility is the installation of a semi-automatic control, having a number of push buttons at each station which are preset to automatically produce a definite, desired intensity. The operator in this case merely pushes the button for the desired cue and the dimmer equipment automatically runs until the preselected desired intensities are obtained, at which point the dimmer automatically stops. It is obvious that the more complex the control system, the more costly the initial installation of the apparatus.



ABOVE is a typical pilot control station for motor operated dimmers in a small theatre. In theatres where there is no stage and no intention to provide any form of stage lighting, such a control can be installed.

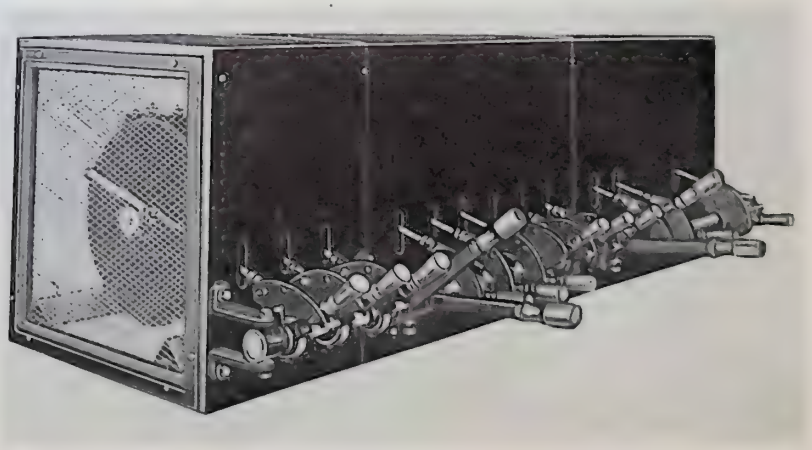
Installing the Equipment

In selecting the location for the dimmer equipment, there are a number of considerations that should be reviewed. First of all there must be adequate ventilation to dissipate the heat generated in the dimmer equipment. This is of particular importance with resistance dimmers, but with any type of installation the ventilation should never be restricted so as to cause the dimmer equipment to exceed its normal operating temperature. Overheating the dimmer equipment will cause the apparatus to fail in the same manner as exceeding the rating of the dimmer.

Secondly, the area selected for the dimmer equipment should be free from dirt and dust, particularly any oily atmosphere such as might be present in a boiler room. An accumulation of dirt and dust on a moving contact not only makes the apparatus difficult to operate but also introduces the hazard of burned contacts and improper electrical connections between the moving contact arm and the stationary buttons. An electrical arc produces an extremely large amount of heat, and any condition that causes arcing between the buttons and the contact shoes will rapidly burn out the dimmer unit.

Finally, the location should be selected where the apparatus will be accessible for ready inspection of the contacts, lubrication of the moving parts, and periodic cleaning and servicing. All too frequently the dimmer equipment is located against the ceiling out of reach of the serviceman or even above the ceiling in unfinished attic space. It is

A DIMMER BANK ASSEMBLY arranged for mounting in the motor generator room is shown below with operating handles projecting through the projection booth wall in accordance with Code regulations.



obvious that such installations are usually neglected by the service and maintenance men as they are difficult to reach and maintain.

Further caution should be taken by the electrical contractor in making the installation during the construction of the theatre. The dimmer apparatus is a relatively expensive piece of equipment and should be handled with care to insure that it is turned over to the owner in first class condition. Tarpaulin or covers of some kind should be placed over the apparatus when plastering is performed within the immediate area, and at all times whenever any chipping or cutting of concrete or masonry is apt to cause particles of dirt and dust to fall into the dimmer equipment.

The apparatus should be given a thorough cleaning and lubrication before placing it in operation. All the instruction sheets supplied by the dimmer manufacturer as well as the switchboard manufacturer should be carefully reviewed by the contractor to insure that all points and considerations included in the installation recommendations are carefully carried out. If the apparatus is installed prior to closing in the building, care should be taken to prevent the rusting of steel parts or the corrosion of electrical contacts that would affect the operation of the apparatus. After the apparatus is connected to the various lighting circuits a careful check of these connections should be made and compared with the wiring diagrams furnished for the installation. Only too often improper connections will cause a dimmer to fail before the owner of the theatre has had a chance to use it.

The use of shunting controls to cut out the dimmer equipment in the event of panic presents a very important wiring problem. Many states require that means be provided to turn on the lights in the auditorium from one or more remote locations regardless of the condition or position of any dimmer equipment or circuit switches included in the lighting system. With either resistance or reactance type dimmer equipment, a simple single pole contactor connected across the dimmer terminals will cut out the dimmer and cause the connected lamp load to burn at full brilliancy. However, with the Autrastat type of dimmer equipment, this cannot be accomplished so easily. Because the Autrastat is connected directly across the line, the load connection must be removed from the dimmer and placed on the line by means of a single pole, double throw transfer switch or contactor. Otherwise, if the dimmer happens to be near the "dim" position a direct short circuit can be made by attempting to shunt between the line and the load connections.

The proper wiring connections for the dimmer equipment are shown in the diagrams. It will be noted that the resistance type dimmer is shown connected in the neutral return of the branch circuits. The National Electric Code permits this type of connection and it is recommended by the dimmer manufacturer because any fault in the lighting circuit between the lamps and the dimmer will not cause the dimmer to burn out. However, if any means is provided on the dimmer itself to automatically open the circuit in the "dim" position, then the dimmer equipment must be connected in the hot leg as the Code does not permit opening the neutral returns of lighting circuits.

The Autrastat dimmer should be connected between the main source of energy and the branch feeder to the lighting circuits. A third connection from the neutral of the system must also be made to this type of dimmer. This connection should have a capacity of approximately 40% to 50% of the maximum connected load on each dimmer. It will also be noted that circuit protective devices should be included in the panel board, both ahead of the Autrastat dim-

THE DIMMER BANK may be installed in any loft area which exists above the projection booth with extended levers so arranged as to be easily accessible to the projectionist during his normal duties. Such an installation presents little problem but the loft area should be accessible.



mer and after the Autrastat dimmer, for each branch circuit.

Connections for reactance type dimmers are not shown. However, they are usually connected in the feeder to each group of branch circuits. This type of dimmer is usually included in a completely wired switchboard so that the electrical contractor is not required to do more than connect the main feeders and the branch circuit wiring.

In the arrangement of the lighting panel controlling the circuits that are to be dimmed, it is always desirable to balance the total connected load on the two sides of a 3 wire single phase system or on the 3 phases of a 3 phase, 4 wire system. However, in order to bring the number of dimming units to a minimum, it is sometimes necessary to unbalance the connected load so that several branch circuits can be controlled from a single dimmer unit. Where this condition exists, the unbalance in the auditorium lighting should be compensated by an unbalance in the opposite direction on other panels in the building so that the total connected load of the building is within the limits of unbalance that may be set by the local power company.

It is not possible to place a single dimmer in the common neutral return of a 3 wire or 4 wire circuit as an examination of the diagram indicates that the current flowing in the common neutral will be zero if the branch circuits are equally loaded and no dimming effect would be obtained since there is no current to introduce a voltage drop in the dimmer. Also it is not possible to control both sides of a single phase 3 wire system with a single Autrastat dimmer. Thus, if some branch circuits must be fed from opposite sides of the 3 wire system or the various phases of a 3 phase, 4 wire system, a separate dimmer unit must be provided for each side of the line or each phase of the system. These dimmers may be mechanically connected so that they operate as a single unit, but they are electrically independent, each one carrying its own load on its own part of the system.

Non-Incandescent Limitations

The dimming of electric light is almost as old as the electric lamp invented by Edison. All of the devices discussed previously were basically designed for use with incandescent lighting. There are available for the illumination in theatres other types of light sources such as the fluorescent lamp, both hot and cold cathode type. Unfortunately, the hot cathode type of fluorescent lamp has characteristics which prevent any type of dimming or intensity control. These lamps have an auxiliary equipment that produces a high potential to start the arc in the lamp and includes a starting device which preheats the filaments at each end of the tube until the arc ignites. Any attempt to reduce the voltage on the lamp will cause the arc to drop out and the starter to attempt reignition.

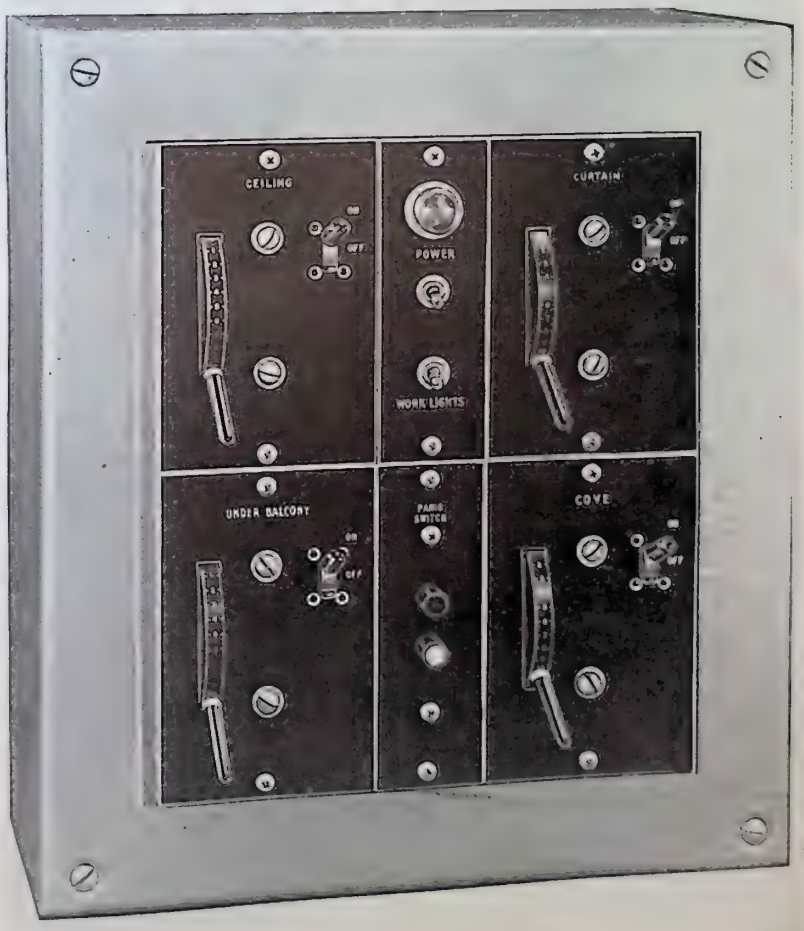
On the other hand, fluorescent lamps of the cold cathode type can be and are successfully controlled in intensity. These lamps have for auxiliary equipment a high potential transformer without any starting device and the electrodes in the ends of the lamp do not require preheating. There are several factors which affect the success of this type of lighting installation. Among these are the desirability of underloading the high voltage transformers required with the fluorescent tubing. In other words, a transformer normally suitable for sixty feet of tubing should have only forty or fifty feet of tubing connected to it. Furthermore, it has been found that the larger diameter tubes operating at lower pressures and higher voltages provide the widest range of intensity control. The gas used in the fluorescent tubing should contain some or all mercury vapor since it permits ignition at lower potentials than the other types of gases commonly used in fluorescent lamps.

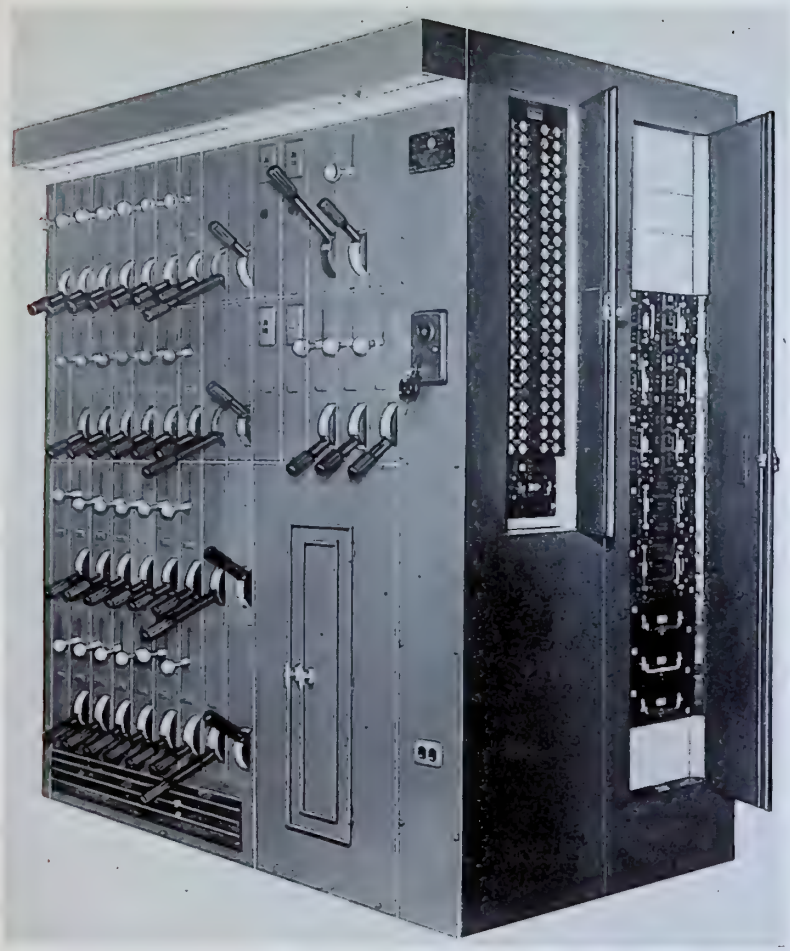
At the other extreme, neon gas provides the poorest results in intensity control as the arc will drop out with only a slight reduction in intensity.

With any type of cold cathode lamps the intensity will reduce as the primary voltage on the high potential transformer is reduced by the dimmer. It will reach a point at which the gas is not completely ionized, causing dark lines to appear in the tubing. Shortly below this condition the arc will completely drop out to blackness. If this type of lighting is used for picture lighting it is desirable to install with the dimmer equipment some means to prevent the intensity being reduced to the point at which this flicker occurs. Further reduction to blackout would be performed by switching rather than further dimming. Such arrangements can readily be made on motor operated dimmer equipment and can also be furnished on the manual type of apparatus.

All three types of dimmer equipment have been used successfully with cold cathode lighting installations, however, the Autrastat provides the best control.

BELOW may be seen a typical pilot control panel for an electronic controlled reactance type dimmer. Reactance dimmers consist of magnetic elements connected in series with the lamp loads.





A TYPICAL COMBINATION stage switchboard and dimmer bank for a theatre having complete stage lighting control is shown at the left. There are few problems of lighting, color combinations, set illumination or changing, that cannot be served through big, complete combinations such as this.

Conclusion

Regardless of the type of dimmer equipment selected by the theatre owner or his consulting engineer, it is most essential that it be properly installed by the electrical contractor and turned over to the theatre owner in good operating condition with complete instructions for operating, maintenance and servicing. It is likewise essential that the theatre operator understands that proper maintenance of this equipment is necessary to provide long life and continued efficient operation of the dimmer equipment. The manufacturers have designed the theatre dimmer equipment to reduce maintenance costs and replacement to an absolute minimum. However, it is impossible to engineer features to overcome carelessness, neglect or improper use of the apparatus. The dimmer equipment is as much a part of the show as the carpet on the floor or the carbons in the projection machine, and it is only by the proper operation and coordination of all devices in the theatre that the owner secures the maximum return on his investment.

OUR RACKET

You boys have a cinch we hear people say,
All you do is watch movies from day to day.
Nothing to do, but look at a screen,
And enjoy what comes out of a movie machine.
If I had your job, I'd work without pay,
Just to sit and watch each photoplay.
Now these are the comments from other crafts,
To us these remarks are just a few laughs.
They don't realize when they chance to speak
That our so called pleasure is seven days a week.
Sunday and Monday are all the same,
If you happen to work at the movie game.
This brings up a proverb, a well phrased line,
"Every one's grass is much greener than mine!"

Submitted for publication by Jerry Conboy, of Stratford, Conn.

Sources of Emergency and Stand-by Electricity

Strikes, Storms, and Shortages Point Up the Wisdom of Adequate Independent Lighting and Power Supply

A power failure during a show means loss of revenue through refunds, while labor costs and film rental continue. In addition, there is the danger of panic and accident claims in a suddenly darkened theatre. This article describes typical equipment now available which will provide either emergency lighting or continued theatre operation, or both, when the regular supply of current fails.

On the evening of August 20, 1947, three hundred and seventy-eight people were enjoying a movie at the Roxy Theatre, Slippery Rock, Pa. Outside, the brightly illuminated marquee and the brilliant lights of the little town indicated that Reddy Kilowatt was on the job, as usual, and that everything was normal.

Then, without warning, the whole town went dark! Somewhere, lightning had struck a transformer and the resulting line failure interrupted electric service to Slippery Rock. Picture the Roxy's owner, faced with a total financial loss for the evening, or even more frightening, the audience in panic, fighting blindly towards exits!

But happily, neither of these events ever happened — at least, not at the Roxy. While the citizens of the town groped around for candles, kerosene lamps, or the other unsatisfactory makeshifts, everything at the Roxy remained normal. There was only a negligible five-second break in the picture; then, as if nothing had happened, the show went on! For one hour and forty-five minutes the Roxy continued to operate on its 10,000 watt standby emergency electric plant, which Edgar Shaffer, owner, had installed some months before. Slippery Rock, meanwhile, remained without electric power until highline service had been restored.

Briefly, this is what happened at the Roxy: when the regular power source failed, line transfer controls automatically disconnected all theatre circuits from the dead mainline, and instantaneously connected them to the standby source. At the same time, a 10,000-watt Onan-made standby plant electrically cranked itself with current supplied by its starting batteries; and within seconds, the unit had taken over the entire electrical load of the theatre. "As a matter of fact," Shaffer commented, "the popcorn machine in the lobby continued to operate as usual, as did everything else!"

The Show Goes On

Edgar Shaffer's foresight in installing standby power for emergencies in his theatre has paid handsome dividends in prestige and profit. Good public relations, for example. His patrons like the way he runs things; and keeping the show going even though the regular power is off has added considerably to his reputation as an efficient and considerate operator. But more important—his ability to keep running with emergency power instead of having to shut down during line failures or voltage drops has eliminated the annoying (and costly) problem of refunds to patrons, never a satisfactory solution, to either the operator or the customer.

The experience of the Roxy Theatre as well as that of other theatres throughout the country indicates that adequate protection against power failures is fast becoming recognized as an indispensable part of theatre operation. In most localities, theatres are required to provide some type of standby service. The State of Pennsylvania has had a state law since 1925 requiring theatres and other public buildings to have an automatic standby power supply. In Portland, Oregon, there are two power companies and most theatres are provided with a manual throwover switch to the other company's service for exit lighting. However, several theatres use storage batteries floating on the line and for one of the Portland theatres, emergency lighting service is supplied by a gasoline engine-driven generator set. Although this is now more or less standard practice for supplying emergency exit lighting for theatres, in November, 1946, it was the only installation of its kind in the city.

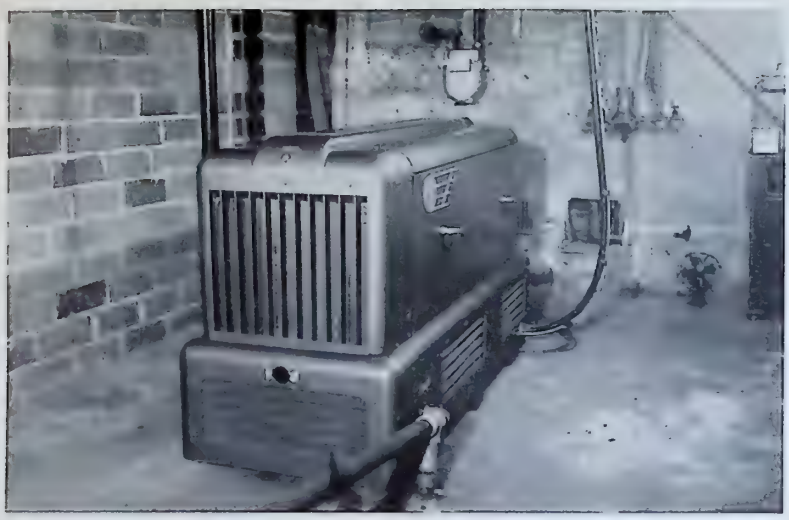
The set consists of a 4-cylinder gasoline engine driving a 6-kw., d.c., 115-volt Westinghouse generator. Control is so arranged that loss of central station power supply actuates relays and contactors that start the emergency set automatically and pick up the load within a few seconds. Five 6-volt automatic type storage batteries in series are used for starting the engine. Weekly starting of the machine insures reliability, keeps the starting mechanism in optimum condition.

Importance of Standby Power

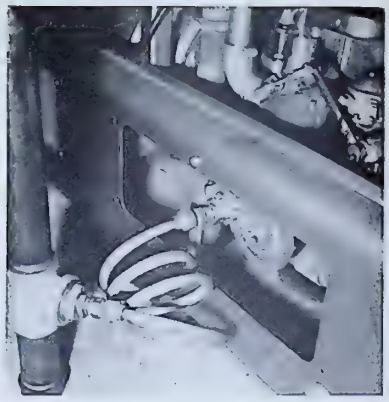
The subject of emergency standby power has assumed an ever-increasing importance as more and more contributing factors have entered the scene of electrical supply. In an address at the convention of the Edison Electric Institute, Atlantic City, on June 2, 1948,

IN SLIPPERY ROCK, PENNSYLVANIA, the town went dark, but lights blazed and the show goes on at the Roxy. Continuous performance is possible. *(Photo courtesy of D. W. Onan and Sons, Inc.)*





IN THE BASEMENT of the Roxy, the above compact, illuminating gas powered motor generator started to carry the full current load within five seconds. *(Photo courtesy of D. W. Onan and Sons, Inc.)*



THE INSTALLATION for natural gas carburetion at the Roxy is similar to gasoline carburetion. *(Photo courtesy of D. W. Onan and Sons, Inc.)*

Gwilym A. Price, President of Westinghouse Electric Corporation, described the growth of the electric power load in the years ahead: "The annual load on power systems in this country will grow at the rate of 30,000 k.w. hrs. per minute for each of the five and a quarter million minutes that comprise the next ten years. This is the gist of the predictions that have resulted from a power-load survey for the coming decade made by Westinghouse. Furthermore, to meet this rising load will require an increase of 80 per cent in the nation's installed generating capacity. With concomitant increases in other facilities, electric utilities will be required to match in ten years all their investment to date. . . The estimates are based, insofar as possible, on fact; they are not mere extensions of curves of past performance. However, large as these charted increases are, there are good reasons for thinking that these prognostications are on the conservative side. This is because of numerous intangible but inexorable trends that are difficult to reduce to concrete figures."

Power Shortages

The Federal Power Commission reported in November, 1947, that the nation is burning electricity at the greatest rate in history—17 per cent above the war-time peak! And in the winter months of 1948, California stayed on daylight saving time to conserve power. Even this does not tell the entire story; this power shortage which is being felt in many areas and has already given theatre owners trouble, is only part of the problem. Several disastrous fires in public places in recent years have focussed attention on the necessity for reliable emergency service, in case of power failure.

Violent weather threatens to increase the difficulty, if the record of past months is any indication. From the Canadian border to the Gulf of Mexico, storms, floods, sleet and unforeseen disasters of every kind may boost the "normal" rate of power breakdowns to record proportions. Unfortunately, too, this precarious condition is susceptible to aggravation at any time by coal and other fuel strikes which inevitably produce ordinances severely restricting the use of dwindling current supply by theatres and other places of public assembly. Despite the efforts of commercial power companies to keep the lines open, thousands of power failures are likely to occur in a year's time.

Blackouts are Preventable

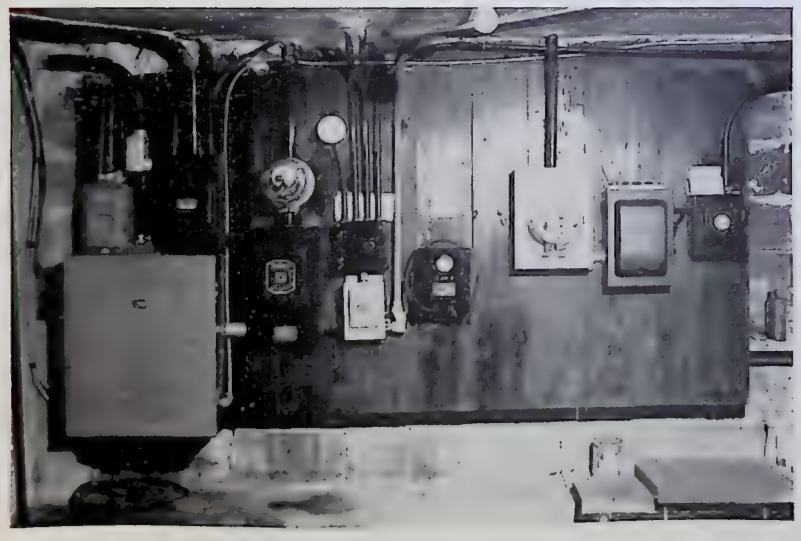
In a business which depends so much on electricity, power failures usually have a paralyzing effect. But today it is no longer necessary for an operator of a movie house to "sweat it out" when the projector sputters to a stop, the screen goes black and the lights go out because the power is dead.

The theatre operator in the average size town may try to convince himself that he's not going to be seriously affected by such power failures. But, in reality his troubles are very likely to parallel those of the Roxy's, where standby power saved the show many times. Therefore, in a business whose very lifeblood is electricity, it is essential that the smart operator be conversant with equipment which will guarantee uninterrupted supply of electrical power whenever line breakdowns jeopardize the usual source of electricity.

Available Equipment

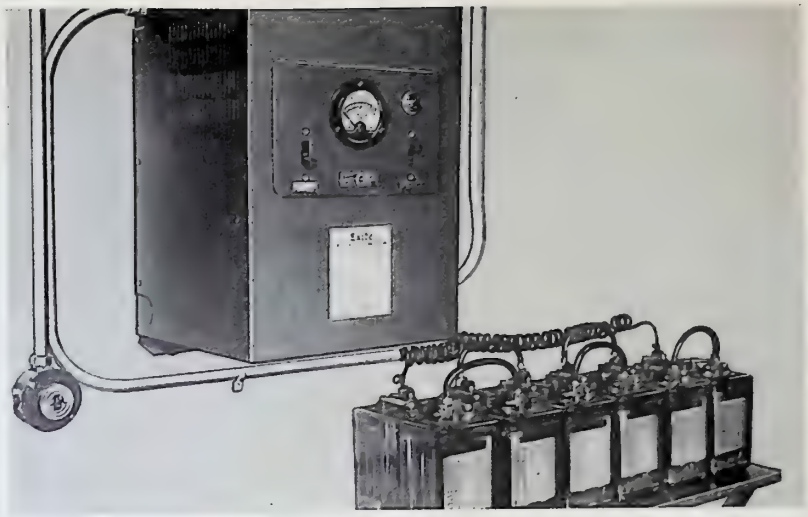
There are two principle types of emergency generating equipment for practical theatre usage: a storage battery system, when adequate lighting for auditorium and exits is the primary consideration; or, either gasoline—illuminating gas—or diesel-driven equipment, when a power plant with sufficient capacity to provide lighting and also keep the show going, is desired. Storage batteries with a capacity for 1½ hours'

THE RELATIVELY SIMPLE CONTROL BOARD in the Roxy shows the line transfer equipment for the emergency power adjacent to the normal power controls. *(Photo courtesy of D. W. Onan and Sons, Inc.)*





FOR PORTABLE EMERGENCY LIGHTING, packaged all-contained units such as this are available. *(Photo courtesy of Electric Storage Battery Co.)*



A 32-VOLT EMERGENCY LIGHTING BATTERY BANK is compact and adaptable to small space. Automatic charging unit and power transfer switch accompanies each. *(Photo courtesy of Electric Storage Battery Co.)*

lighting are generally considered adequate; and some theatres, after a study of the power situation in their own localities, may find storage batteries to be their most practical choice. Size of the theatre, the availability of an emergency power circuit such as in larger cities, and basic lighting requirements will also be decisive factors in this choice.

A specialized type of emergency lighting plant, a water motor generator, was available at one time but does not appear in catalogs or advertising at the present time. To generate 300 watts, this plant required 30 pounds of water pressure and a flow rate of 55 feet per minute. However, its dependence upon a pressure of at least 30 pounds rendered it useless whenever the pressure dropped because of a fire in the vicinity or for any other cause. Its most logical location would seem to be close to a consistent source of water with a steady pressure, for example, a reservoir supplying water from a hill or mountain top. Otherwise, it can hardly be considered practical.

Storage Batteries

One company, specializing in storage battery systems for emergency lighting for many years, offers 32-volt equipment for a load of 1200 watts or less in small buildings or limited areas where several lights are required. For loads from 1200 watts up to 10,000 watts and more, and for any practical length of emergency protection, 115-volt equipment is available. Both types consist of a multi-cell, acid-tight, sealed glass jar storage battery system, an automatic charging unit, and an automatic transfer switch unit.

Emergency light is supplied instantaneously and automatically upon failure of the normal light supply. Upon restoration of the normal supply, the emergency lighting is cut off immediately from the storage battery and the energy taken out of it during the emergency is quickly and automatically restored. Special charge controls automatically reduce the charge rate at the proper time to a small trickle to maintain the battery fully charged and instantly ready for the next emergency.

The entire initial cost, as well as maintenance, is low. The apparatus is simple, reliable in operation, and is so designed that with the use of first class materials, long life is assured without expensive upkeep. With proper care, the complete equipment will give satisfactory life. The system does not require skilled attention.

Another automatic emergency lighting unit produced by the same company is a small inexpensive single or double flood light portable 6-volt set which is plugged into an ordinary light socket. Lighting more than 8000 square feet, the unit will furnish light continuously for 2½ hours with standard lamp, and 1½ hours with both lamps. This type of equipment is very economical, of course, and is said to be very effective for exit lighting.

Standby Power Plants

For more extensive electrical supply, standby power plants which generate electricity are indispensable. Gasoline, illuminating gas or diesel-driven emergency generating units provide practically unlimited periods of standby service and usually range from about 3 to 50 k.w. rating. They are commonly arranged for automatic starting upon failure of the regular power supply.

One of the outstanding manufacturers of this type of electric generating plant provides units with continuous power outputs of 5, 10, 15, 25, and 35 k.w. Normally utilizing gasoline, these plants can also be operated with natural gas, butane, or propane fuels with the installation of gas carburetion equipment.

The plants provide a dependable source of A.C. electricity for both con-

A 115-VOLT EMERGENCY LIGHTING SYSTEM requires more space, together with automatic charging unit and automatic transfer switch boxes, not illustrated here. *(Photo courtesy of Electric Storage Battery Co.)*



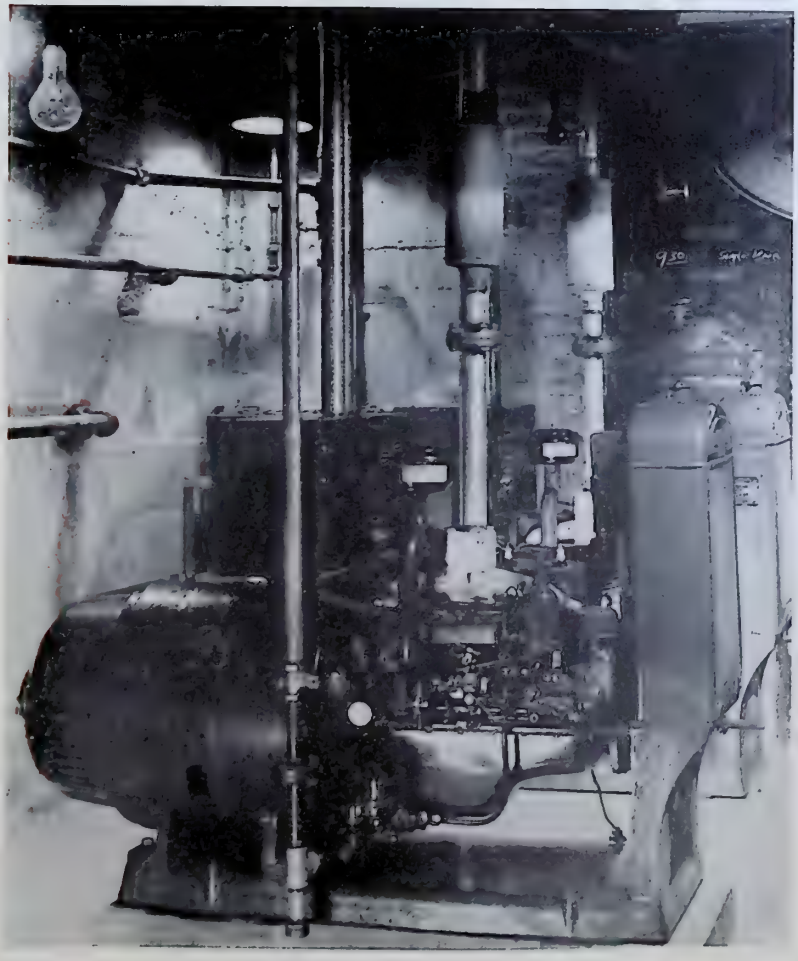
tinuous heavy-duty commercial and industrial applications and emergency standby service. Of compact single unit design, they are supplied complete with engine and electrical controls, starting batteries and standard accessories mounted inside the housing. Tested and inspected, these units are shipped ready for immediate stationary or portable service. Heavy gauge sheet steel housing affords full protection for engine, generator and accessories; and removable panels and grilles make inspection and servicing easy.

When regular A.C. power service fails, the control panel automatically starts the engine-generator in 5 to 15 seconds, and switches the emergency standby power to the branch circuits. The standby plant automatically stops when regular service is restored. Interlocked contactors and special design make it impossible to have both normal and emergency power supplied simultaneously.

These units will perform equally well in an emergency lasting for several days as in one lasting but five minutes. Operating cost is negligible in standby applications with maintenance attention limchange and starting battery replacement every three to four years. An automatic battery trickle charger contained in the line transfer control maintains the batited to a weekly test run, occasional oil teries fully charged and it is necessary only to check water level, condition of battery, etc., at regular intervals. While the life of each unit depends to a great extent on hours run and care given, these units should provide dependable service for many years even with a minimum amount of care. Initial cost ranges from $1220 (approx.) to $3845 (approx.), depending on the rated output of the unit. Size and investment can be kept down by picking up only the important lighting circuits such as exits, lobby, ticket office, booths and stairways. Power loads can be limited to the motor generator for the projectors, sound amplifiers, heating and ventilating motors.

Life of the standby plant is indefinite. Depreciation can be spread over twenty to thirty years. It is advisable to select the standby plant from a responsible supplier offering equipment which, by utilizing proven controls, assures dependable protection during emergencies. Before purchasing standby equipment, it is important to determine whether it meets local and state wide requirements and has insurance company approval.

A TYPICAL STANDBY ELECTRIC PLANT INSTALLATION in the Garden, Pittsburgh, Pennsylvania. Two 10 KVA sets are used, one supplying 115/230 volt AC single phase for lighting circuits, the other a 10 KVA 230 volt three phase, supplying a 5 h.p. projection and sound generator. *(Photo courtesy of Kohler Co.)*



Valuable Insurance

The storage battery system and the gasoline-driven electric generating plant described above are typical of the efficient equipment that is now available to motion picture houses. For emergency lighting only, a battery system fulfills basic requirements admirably. Where continued theatre operation is desired, an electric generating plant will furnish uninterrupted power and electricity in the required amount for thousands of hours, if necessary. In recent years, as the need for a private source of electricity has become more acute, the number of manufacturers building this equipment has increased. For the theatre owner, the important facts are these: the general availability of auxiliary power, and its value in eliminating the great dangers inherent in all power failures.

Theatre owners located in areas affected by electric power shortages, where voluntary or enforced reduction of power consumption is necessary, will get dual use from an independent electric plant. It can serve as an emergency standby source of electricity and also be used to reduce peak loads by regularly supplying certain portions of the lighting or power load, proportionately reducing the demand from power company lines.

Standby power is actually inexpensive insurance whose premium is a moderate initial investment and a very minor upkeep cost. However, look at the dividends! The prestige and confidence that such equipment commands from the public alone is of inestimable value. In actual dollars and cents, the saving of refunds from one or two performances may well write off the entire cost of the emergency unit. And how much the theatre owner's peace of mind is worth remains for him alone to decide.

* * *

Acknowledgments

The editors of THEATRE CATALOG are grateful to: Messrs. Edwin C. Hinschoff and Virgil C. Gilbertson, of D. W. Onan & Sons, Inc., for information and assistance in preparation; Mr. A. M. Dingee, of the Electric Storage Battery Company, for a wealth of data; Mr. F. W. Nelson, of Kohler Company, for some valuable source material; Mr. Hendley Blackmon, Managing Editor of ELECTRICAL WORLD, for kind permission to use an article from that magazine; and to Mr. Charles A. Scarlott, Manager, Engineering Publications, Westinghouse Electric Corporation, for his cooperation in allowing us to quote an excerpt from Mr. Price's address, as published in the July, 1948, issue of WESTINGHOUSE ENGINEER.

THEATRE LIGHTING AND POWER REQUIREMENTS:

ITEM	THEATRE SEATING CAPACITY	400	600	800	1500	2000 and Up
1	Exit and Aisle Lights	8—10 Watt Exit 10—10 Watt Aisle Total—180 Watts	10—10 Watt Exit 20—10 Watt Aisle Total—300 Watts	10—10 Watt Exit 24—10 Watt Aisle Total—340 Watts	12—10 Watt Exit 30—10 Watt Aisle Total—420 Watts	500 Watts and Up
2	Projection and Booth Lights	1500 W. Lamp or 1 KW Arc—¼ Motor—2—40 Watt Lights Total for two Projectors—3780 Watts (Max.)	1 KW Arc ¼ Motor—2—40 Watt Lights Total for two Projectors—2780 Watts (Max.)	50 Amp.—37 Volt Arc—¼ Motor—3—40 Watt Lights Total for two Projectors—4520 Watts (Max.)	70 Amp.—37 Volt Arc—¼ Motor 3—40 Watt Lights Total for two Projectors—6000 Watts (Max.)	70—Amp.—37 Volt Arc and up 6000 to 18,000 Watts
3	Sound Amp.	150 Watts	200 Watts	200 Watts	200 Watts	500 Watts
4	Marquee	(No estimates given. Requirements range from 100 to 30,000 watts, with theatre size not always an indicator.)				
5	Rest Rooms	2—40 Watt Lights Total—80 Watts	2—40 Watt Lights Total—80 Watts	4—40 Watt Lights Total—160 Watts	8—40 Watt Lights Total—320 Watts	400 Watts and Up
6	Heating	Oil—½ H.P.—550 Watts Stoker—2 H.P.—2000 Watts (Add 1450 Watts)	Oil—1 H.P.—1000 Watts Stoker—3 H.P.—3000 Watts (Add 2000 Watts)	Oil—1½ H.P. 1500 Watts Stoker—5 H.P.—5000 Watts (Add 3500 Watts)	Oil—2 H.P. 2000 Watts Stoker—6 H.P.—6000 Watts (Add 4000 Watts)	Oil—3½ H.P.—3500 Watts Stoker—8 H.P. 8000 Watts (Add 4500 Watts)
7	Cooling (Approx.) (Not included in totals)*	Water—4½ KW—Refrigerant—18 KW	Water—8 KW Refrigerant—27 KW	Water—10 KW Refrigerant—36 KW	Water—10 KW Refrigerant—67.5 KW	
8	Pop-Corn Machine	2200 Watts	2200 Watts	2800 Watts	2800 Watts	2800 Watts
9	Other Lighting: Ticket Office. Halls, Lobby, etc.	150 Watts	200 Watts	600 Watts	800 Watts	800 Watts and Up
	Minimum Load (Items 1, 2, 3)	4,110 Watts (using lamps) 3,110 Watts (Using 1 KW Arc)	3,280 Watts	5,060 Watts	6,620 Watts	7,000 Watts and Up
	Power Unit Recommended for Limited Operation	5 KW	5 KW	10 KW	10 KW	10 KW and Up
	Normal Load (Item 7 not incl.) (Based on oil heating)	7,090 Watts (using lamps) 6,090 Watts (Using 1 KW Arc)	6,760 Watts	10,110 Watts	12,540 Watts	14,500 Watts
			(If Stoker heat is used, add wattages indicated in Item 6 to totals.)			
	Power Unit Recommended for Normal Operation	10 KW	10 KW	15 KW	15 KW	15 KW and Up

*Figured on .045 tons of refrigerant used per seat, 1 H.P. used per ton, and 1000 Watts per H.P.

	COST OF POWER UNITS	COST OF LINE TRANSFER CONTROLS	TOTAL
5 KW	$ 862.50	$119.00	$ 981.50
10 KW	1,445.00	195.00	1,640.00
15 KW	1,945.00	275.00	2,220.00
25 KW	2,295.00	275.00	2,570.00
35 KW	3,295.00	550.00	3,845.00

Note: These costs are not industry average. They are one manufacturer's prices.

IMPORTANT FACTS REGARDING THEATRE STANDBY:

It is interesting to note that a theatre of 2000 seating capacity, or five times the capacity of a 400-seat house. requires only 50% increase in the size of a standby plant for normal operation. This is largely due to the fact that projection and booth lights requirements are relatively constant for both small and large theatres, when compared to other requirements.

* * *

The recommended capacities of standby power plants, both for the "limited operation" and "normal operation" columns, include the required wattage for running two projectors simultaneously while reels are being changed.

* * *

Because the requirements for electric power to light fronts and marquees varies so much, no figures are given. A survey of a number of theatres, showed that marquee lighting varies all the way from 500 watts to 30,000 watts. And it is not always the large theatres that use the most marquee lighting. In estimating the requirements for this purpose, therefore, add whatever wattage necessary for either partial or complete marquee lighting, and add to the recommended totals contained in the table.

* * *

Exit lights are generally 10-watt. Aisle lights are either 7 or 10-watt. The lighting needed for these two services is consequently very negligible. In a small theatre, it may total only 100 watts and even the largest house will not require much over 800 watts for this purpose.

Neon lighting takes approximately one 15,000-volt transformer for every 50 feet of tubing. Most such transformers are Hi-Power factor type requiring about 300 watts each. Roughly, four transformers will provide enough tubing for a small marquee. An extremely large marquee may take as many as 100 transformers that draw 30,000 watts. Approximately 500 watts are needed for each transformer of the LO-Power factor type.

* * *

Most practical type of standby plants for theatre use is the gas or gasoline engine powered. Diesel is not recommended, for two reasons. First, gas, gasoline engine driven plants will start quickly, an important factor in theatre standby operation. Diesel plants, on the other hand, generally are harder to start. Second, the main reason for using Diesel engines for power plants is their low fuel consumption factor. But since no theatre standby plant is expected to run for long periods of time, fuel economy is eliminated as a factor.

* * *

Special attachments for operating standby plants from natural (city) gas, or from butane or propane, are available.

* * *

Under certain conditions—lack of space, objection to radiator heat, avoidance of noise—it is recommended that the standby plant be hooked up to city water; but even in the larger installations, the amount of needed water is relatively minor (from less than one gallon per minute, to six gallons per minute at 60 degrees).

Fundamentals of Correct Theatre Seating

The Relationship of Planned Sightlines to Spacing and Floor Slope that Insures Adequate Vision to Patrons

By Felix W. Alexa
Eastern Sales Manager, Kroehler Mfg. Co.

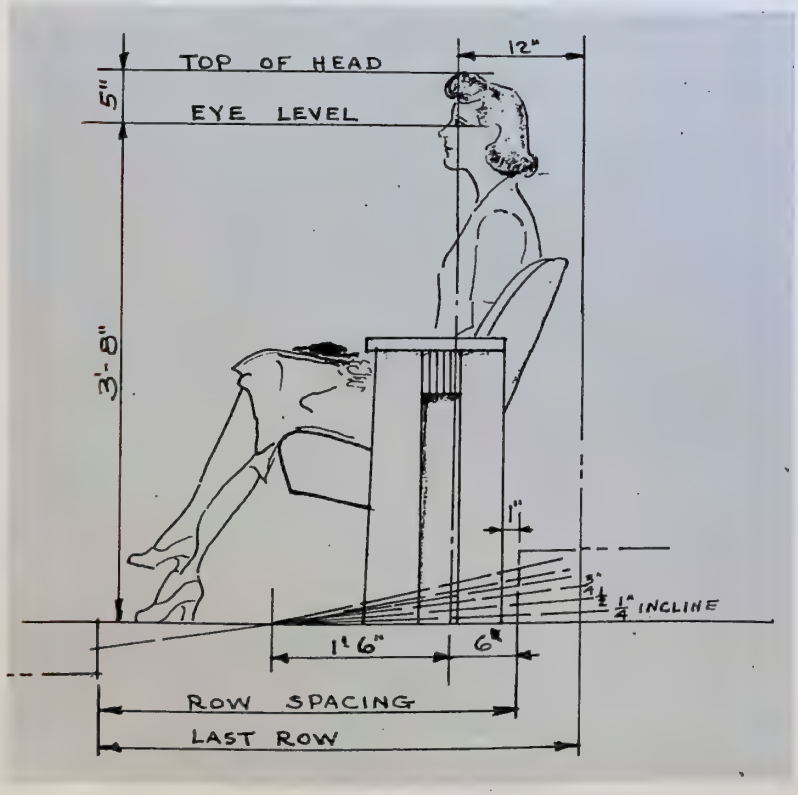
Poor visibility and uncomfortable seats are often the end product of imperfect theatre design. They are invariably a poor advertisement for the house unlucky enough to possess them and in these days of hungry competition should be removed or modified, to provide patrons the best vision and comfort available. Factors determining the seating layout include: sight lines, floor slopes, staggering, back to back spacing. Desirable arrangements are treated in the following discussion and the author makes several recommendations on the basis of his experience.

Importance of Seating

How many times have you heard this said—"Give me a good picture and I'll pack them in, seats or no seats"? That was true years ago but times have changed. The same exhibitor who belittled seating is now faced with the ever growing field of outdoor entertainment, increasing numbers of home television sets, and a neighbor with a plan for a better theatre. Today he must think of better seats, more comfort, and better theatre design with good sight lines, as well as good pictures.

I am reminded of an experience I had about ten years ago when my former boss, the late Mr. Olmsted, asked me to call on one of his clients to discuss plans for reseating a well known Broadway house. The reseating program was brought about because a neighboring owner had built a theatre with better seats, more comfort, etc., and the business was all going his way. The old seats were really out of date too, so something had to be done to bring the customers back. I do not know just how it happened, but when it came time for me to say my piece to help close the deal, I told the buyer that before spending any money on new seats he would do better to spend the money improving the floor so that the patrons could see the stage and the screen. This theatre had been designed by a well known architect, one of the best in the business, and the theatre had been in operation since 1919—the pride of the Circuit. I can still see the buyer sitting at his desk, puffing away on his cigar, and the anger mounting in his face as my suggestion implied in his mind that he had a poorly designed theatre; while my boss's expression was one of complete disgust. The buyer blew his top and demanded that I prove my statement. Arrangements were made to meet at the theatre next day with the architect, builder, and other experts. Test check of the sight lines disclosed, to the amazement of all, that fifth row vision was all that could be had for the rear third of the orchestra floor. Upon checking back against the original drawings it was discovered that someone had departed from the drawings and taken a short cut, at the expense of good sight lines. It was evident this condition had to be changed before reseating, and at a great expense. In this case the extra cost was almost as much as the cost of the new chairs.

FIGURE 1—Standard measurements of the seated patron are very important to sight line engineering.



It is the architect who is responsible for good vision, arrangement, and spacing of the chairs, and the determination of the floor slope. More and more, however, both architects and theatre owners expect and demand that the seating company check, or furnish sight line analysis.

Problems Involved in Seating

When we consider the problem of sight lines, floor slopes and seating comfort, we find that all three are so related that it is impossible to solve one without taking the others into account. We must first start with the seated person and establish standards to work with, such as:

1. Average height of a person seated.
2. Average eye level.

(see Figure #1)

Next we must consider the area to be viewed. For the "legitimate" theatre it is the stage; for the motion picture theatre, the screen. With the growth of motion pictures it became apparent that the factors of design for these separate fields of entertainment had to be approached differently. The depth of the "legitimate" theatre is limited by many factors, principally voice coverage, and the ability to see stage action in detail from the last row. There seems to be no limit to depth of the motion picture theatre as there no longer is any problem in voice or sound reproduction, and close-ups can be enlarged three or four

times actual size without any loss of reality. In the modern Drive-In Theatre, for example, the last car ramp may be 600 feet or more from the screen but neither visibility nor audibility is impaired. Since the shape and size of the theatre is determined by the site on which it is built, each theatre must be studied and designed to meet varying physical conditions, as well as variations in building codes.

Seeking Ideal Sight Lines

The ideal sight line is one that will give unobstructed vision to the screen with the least physical exertion to eye and neck muscles. The ideal viewing angle would be zero degrees formed by a line from the viewer's eye to the center of screen, in both the horizontal as well as vertical planes. To achieve ideal sight lines, or first row vision, and still stay within reasonable costs, requires a staggered seating arrangement, as well as a carefully studied screen position. The relationship of first row, height of screen, and spacing, have a direct bearing on how steep, or flat the floor will be. The first row radius will determine how effective the stagger will be. The width of the auditorium at the stage or screen end will, to a large degree, influence the curvature of the seating arrangement. The curvature of the first row should not place the viewer in such a position as to compel him to view the screen from an extreme side angle—see Diagram #1.

As mentioned above, the ideal sight line is one that will give unobstructed vision to the screen over the heads of occupants of the row directly ahead. This would result in a floor slope that would exceed maximum floor pitches as defined by most building codes, and would present practical difficulties in construction. Therefore, it becomes necessary to take advantage of being able to see the width of the screen between the heads of the occupants of the row directly ahead, with clear vision assured over the heads of all other rows, and requires the viewer to shift himself in the chair to one side or the other. The row directly ahead being the obstructing row, sight lines based on this system have been designated as "one row obstruction". To overcome this objection, methods for staggering chairs have been developed. Each chair must be taken into consideration as the visual angle changes with each chair position and requires careful study.

Staggering for Better Vision

Although the best viewing positions are along the axis of the theatre, it is here that one has the least sight line clearance — a condition which can be helped only by a staggered arrangement. The following methods are being used where the seating arrangement calls for a center bank of chairs.

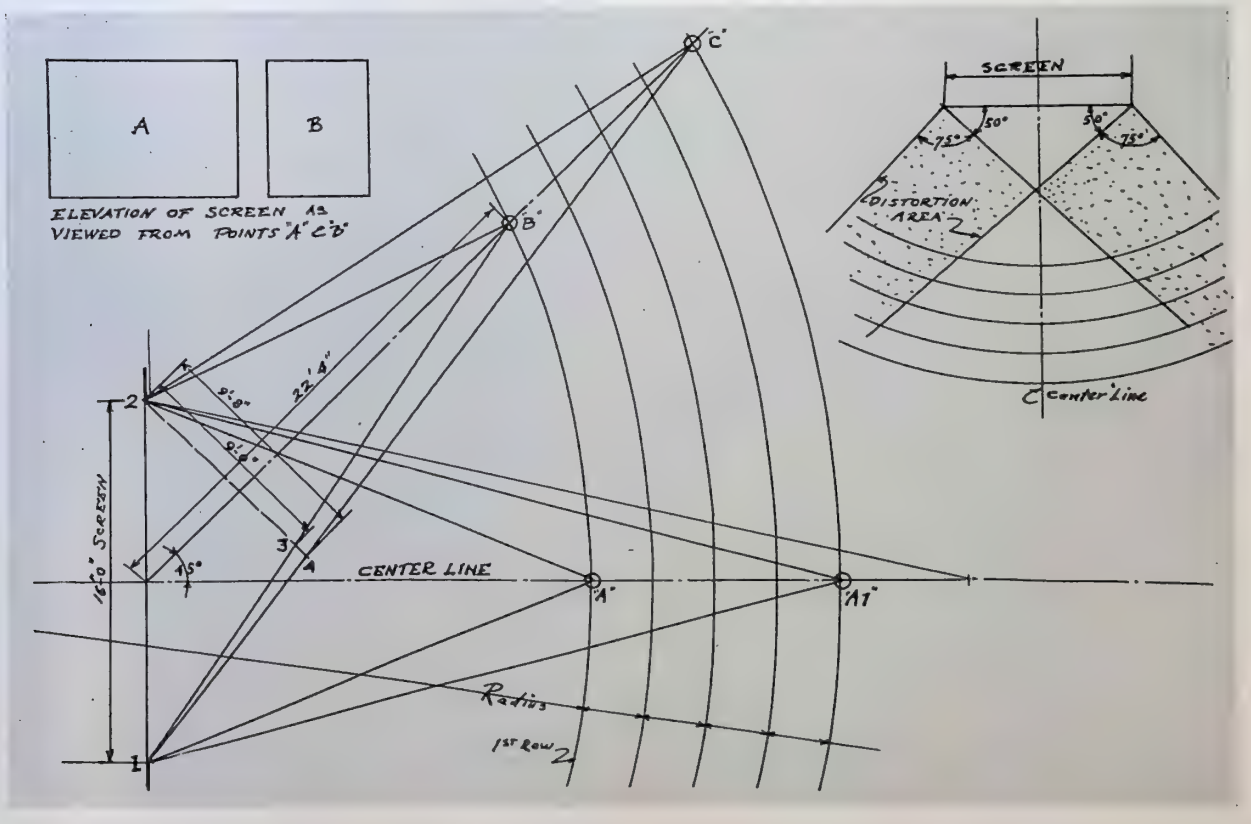
1. All chairs the same size, with a half chair stagger every other row; for example—all odd rows having 14 chairs; while all even rows 13 chairs, which results in a half chair aisle indent at each end of the row, and the loss of one chair per row. This method is partially corrective, depending upon the curvature of the rows.
2. By using three chair sizes in each row and alternating the order of the chairs every other row; for example — 4-19", 6-21", 4-20" in all even rows; with 4-20", 6-21" and 4-19" in all odd rows. With this method there would not be any loss in seating capacity nor any aisle indent; all aisle end standards would be in alignment. This method is also only partially corrective.

It has been found that under certain conditions both of these methods only transfer the blind seats from the center to the ends of the rows, with some improvement every third row; reducing these blind seats approximately 50%.

In the wall or outer banks where the chairs are all the same size and the aisles are parallel, the chairs become automatically staggered with the exception of a few rows down front. Tapering aisles have a tendency to prevent the automatic stagger taking place and will require, therefore, that the chairs be staggered by changing the sizes.

More and more, theatre owners are beginning to realize the advantages of staggering chairs, especially in the case of reseating where it has been found

DIAGRAM 1—Viewing angles and their contrasted results on the eye of the seated patron. The distortion areas are unsatisfactory for proper viewing.







THE CURVATURE that provides the greatest number of good viewing angles may be seen at top in the auditorium of the Picwood, Los Angeles, California. One method of staggering chairs has been used in the Magnolia, Seattle, Washington, to minimize distortion areas. At bottom is an arrangement of theatre chairs with a reverse slope floor in the Miami, Miami, Florida. All are Kroehler Push-Back Chairs.



that sight lines can be improved while maintaining the existing floor slope.

Floor Slopes

There are times when the design conditions call for an all downward slope, while in other instances a floor slope having an upward as well as a downward slope is desirable. In such a case, a careful study of the screen position must be made so that the downward viewing angles from the balcony, and the upward viewing angles from the main floor seats are balanced out to create the most comfortable viewing angles for the greatest number of seats. It has been found that a variation in the back to back spacing, for example—32″ minimum for the front rows, 33″ spacing in the center of the house, with 34″ for the rear rows, helps to reduce the overall slope and still gives good sight lines. The average back to back spacing used today is 34″. This gives comfortable seating, and where the "push-back" feature is used it results in a passing clearance equal to 40″ back to back spacing and eliminates the need for a seated person to stand to allow others to pass in or out of the row. At least 40″ spacing is required to eliminate the need for patrons to stand to allow others to pass. To use this 40″ spacing for the average theatre would mean the loss of approximately 25% of the seating capacity. The use of retractable chairs is the solution for limited spacing and at the same time it eliminates the inconvenience caused by standing patrons as well as those passing through the row.

It must be kept in mind, when designing a theatre floor, that the chair legs or standards are made to fit floor slopes in increments of ¼″ per foot, starting at level, to a slope of 2″ per foot. Maximum recommended downward slope of 1½″ with ¾″ per foot for the upward slope. The best seating comfort will result when the floor is designed in this incline range. It will give a slightly greater total pitch in the floor than required but it will be on the safer side in seating comfort and in viewing comfort.

The possibility of having seating depths of as much as forty-four rows, all on one floor, because of the ability to see the enlarged screen from such a distance, has created the need for a departure from the conventional downward slope. The all downward slope, in such instances, would become excessive and would present difficulties in meeting grade conditions. The ability to make floors generally flatter to meet these conditions, has been made possible by the positive, careful seat staggering now developed and tested, and the flexibility in floor slope treatment which takes advantage of the fact that the screen is a movable element in the vertical plane, plus the fact that the spacing also can be varied to give greater sight line clearances.

Two Simple Methods

There are two methods for solving the problem of sight line clearances—graphical and mathematical. The graphical method requires careful and accurate drafting, while the other involves some

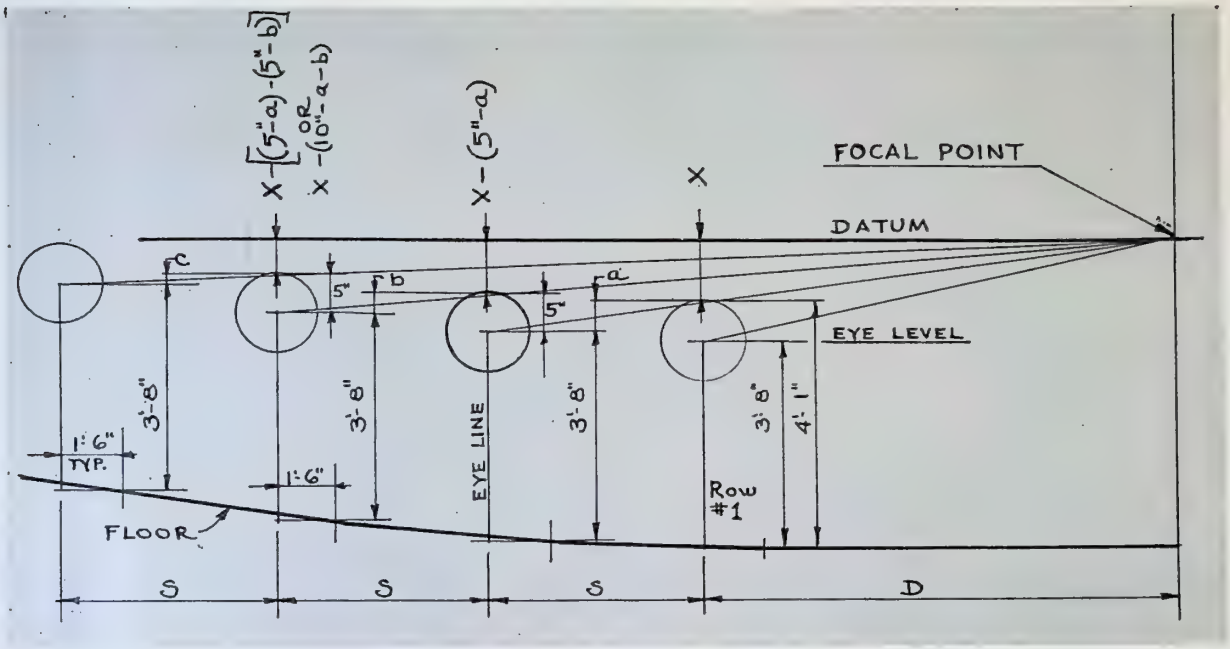


DIAGRAM 2—Method in which the proper eye level can be translated to floor elevations by adding or subtracting the standard eye height. Below, Diagrams 3, 4, and 5 show various results.

easy calculation which will give the eye level for each row. This eye level can be translated to floor elevations simply by adding or subtracting the eye height used, to the result. To determine the elevation of the floor slope mathematically, the following method of procedure should be followed—see Diagram #2.

F is the focal point or bottom of screen; S is the back to back spacing; X is the vertical distance from the focal point to the top of head of the occupant of the first row.

1st step—

$$\frac{X}{\left(\frac{D}{S}\right)} = a = \text{eye level 2nd row, below head of occupant of 1st row}$$

X + a + 3'8" equals floor elevation of 2nd row, mensured 1'6" forward of the eye line from the datum line

2nd step—

$$\frac{X-(5"-a)}{\left(\frac{D}{S}+1\right)} = b = \text{eye level 3rd row}$$

3rd step—

$$\frac{X-(5"-a)-(5"-b)}{\left(\frac{D}{S}+2\right)} = C$$

Last step—

$$\frac{X-(5"-a)-(5"-b)-(5"-c)\ --\ (5"-z)}{\left(\frac{D}{S}+(1 \times \text{number of seat spaces})\right)} = \text{eye level last row}$$

When "X" value becomes zero all minus signs become plus.

Diagram 3 shows the effect to the floor when the focal point is lower and sight lines figured for 1st row vision.

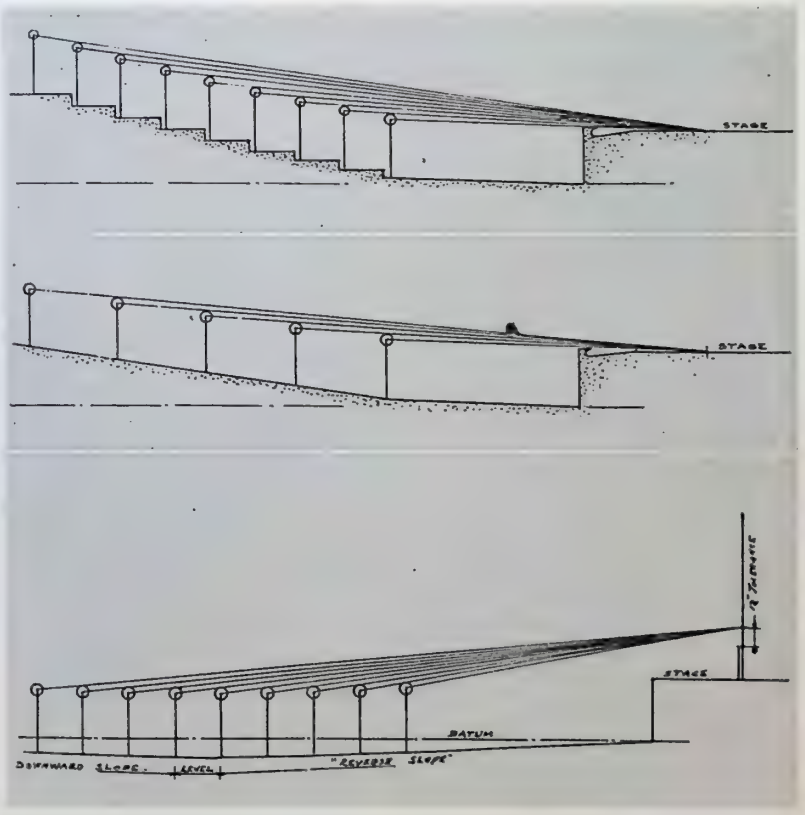
(Diagram #3)

Diagram 4 shows how the floor drop can be reduced when sight lines are based on staggered seating.

(Diagram #4)

Diagram 5 illustrates the effect to the floor when the screen position is raised.

(Diagram #5)



Modern Methods of Theatre Cleaning

A Review of the Advantages of Vacuum Cleaning and the Modern Equipment Available for the Purpose

By Richard Webber
The Spencer Turbine Co., Hartford, Conn.

Of the total cleaning cost, only 10% is equipment while 90% is labor. The efficiency of the equipment, and therefore, its ability to do the best possible job, is obviously important. Poor equipment can only result in increasing labor without accomplishing the desired cleaning objective. Good equipment should cut down on labor and actually accomplish a better end result. As a man of wide theatre cleaning equipment experience, Mr. Webber's views have merit.

The basic purpose of this survey is to show how expense in connection with the renewal of carpets and the cost of redecoration may be held to a minimum by the use of properly designed vacuum cleaning equipment. And this, to a theatre manager, is an ever present problem.

Grit and Carpets

Deterioration in carpets primarily depends on the amount of traffic that moves over the surface. However, the gradual thinning of the nap of the fabric is caused mostly by the abrasive action of minute particles of imbedded sharp grit. This nap cutting action is repeated many thousands of times per day as the feet of the patrons pass over the surface to and from their seats. It is vitally important, therefore, to the life of the carpets and the carpet investment, for whatever cleaning medium is used, to have sufficient power to remove this grit as well as the dust. It isn't practical to lift the carpets daily and knock this grit out; so that an air stream properly directed and of sufficient volume to pull it out is the only modern answer. This is the job of a well designed vacuum cleaner.

Airborne Dust

The air surrounding us today is different from that of a decade or two ago. With the increasing use of oil burning, ordinary house dust is becoming more and more oil impregnated. This oily dust cannot be removed from decorated surfaces by a cloth or duster without a very strong possibility of smudging the surface. It therefore must be lifted from the surface by suction; and here again, a properly designed vacuum cleaner will keep the redecoration cost at a minimum.

The average layman only visualizes vacuum cleaning equipment in connection with removing dust from carpets, rugs, draperies and furniture. In capable hands, however, this is only part of its many uses.

Removing vs. Spreading

Bare floors, whether of wood, linoleum, rubber, marble, or cork, should be vacuum cleaned. By this method all of the dust is actually removed, and not spread about as must be the case where brushes and brooms are the cleaning tools.

Someone with a sense of humor has said that: "If a broom had a belly, it would be a vacuum cleaner". And that is the real answer to the inefficiency of brush and broom cleaning, neither has a belly. As a result, they can remove only a small part of the dust and must spread the larger part to resettle on the walls, floors, and furnishings.

Where stage performances are given, the presence of dust is a serious consideration. Tap dancers, jugglers or any other violent movement can stir up a cloud that spotlights will amplify. Vacuum cleaning the floor surfaces will leave them dustless and permit no dust to lodge in the crevices, even under the floor cloth.

VARIOUS METHODS AND TOOLS are available for application to theatre cleaning. Below, a workman may be seen using a portable vacuum. Dust from chair backs is drawn into a bag in the metal container on the dolly which is then carried from the theatre. Similarly a portable vacuum is used to clean the rug. This method has definite advantages in allowing the janitor to use a relatively short hose connector. But it has disadvantages also.



Suction Cleaning Of Equipment

Vacuum cleaning should be used for cleaning all the equipment back stage including footlights, drops, etc. The suction method of dust removal has also been found most effective in maintaining the light reflection and sound transmission qualities of the moving picture sound screen. Frequent applications of the vacuum cleaner will conserve the projection efficiency of the screen with a resulting saving in carbon and current consumption. It will also substantially extend its usefulness.

In the horn and equipment lofts where dust accumulation may affect delicate adjustments, vacuum cleaning can be used to remove the dust and protect an investment of thousands of dollars.

For ventilating ducts, grilles, filters, and generally wherever dust collects and is difficult to remove by any other method, the vacuum cleaner is indispensable.

In the projection booth where machines require frequent cleaning, vacuum cleaning can again be used to great advantage.

Dust is present in every part of the theatre, and it is always less costly to remove it efficiently than with inefficient brushes, brooms, dust cloths, etc.

Value Of Efficient Tools

The term vacuum cleaner, is broadly applied to all types of machines which remove dust by the force of an induced air current passing over the surface being cleaned. It will be found that their efficiency is usually in almost direct ratio to their selling price. As in most other pieces of equipment, the theatre is a big plant with big maintenance problems so that the greatest satisfaction and performance will result from the best.

The manager contemplating the purchase of vacuum cleaner equipment should carefully consider this fact: The total cost of: interest on investment, depreciation charges, electrical current, replacement of parts, and upkeep on the most expensive type of cleaning system will never be over 10% of the labor cost necessary to use it. If its efficiency is low, the 90% labor cost goes up or the cleaning suffers. If its efficiency is high, less labor will actually accomplish better results. The first cost of the cleaner must be considered; but its cleaning efficiency is of far greater importance.

Types Available

Vacuum cleaners come in two types: the so-called portable machine; and the installed system, with the machine in the basement and a system of piping extending throughout the building.

Naturally, portable machines cost less than the installed system, and there are several types on the market that clean with a fine degree of efficiency. When first cost must be kept to a minimum their use may be considered; but, even then, only the best should be purchased.

The central system, installed in a new building or wherever possible in an existing building, will, of course, give the maximum efficiency at the tool end. Also, it will clean quicker, more thoroughly and with less maintenance cost.

The central system has an added advantage for theatre use. You cannot mix air and dirt without the air becoming foul. With any portable bag type cleaner this air must necessarily be discharged on the spot directly back into the theatre. As contrasted to this, with a central system the air is discharged into a flue and therefore outside of the building itself. This is particularly important today when smoking in many parts of the theatre, added to the almost continuous occupancy of many main stem and grind houses, creates its own pollution problem without the addition of dust.

A clean and fresh smelling theatre brings added enjoyment of the entertainment furnished. A clean and dust free theatre will attract a more desirable clientele.

Conclusion

In conclusion, vacuum cleaning when applied in its fullest efficiency and with equipment having sufficient power to remove dust with a minimum of labor cost will reduce the maintenance cost.

It will bring "Spring Cleaning" results every day.

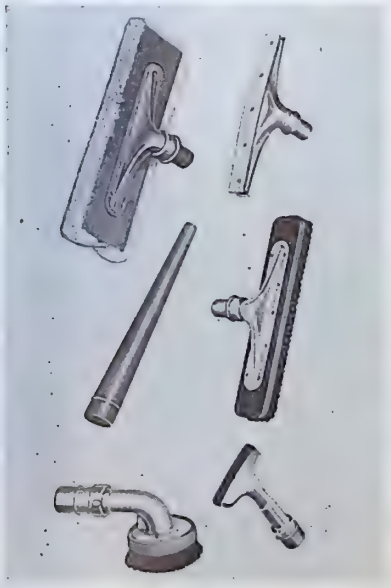
It will reduce the cost of redecorating.

It will prolong the life of carpets.

It will keep the screen in proper shape for better projection.

It will insure a fresh smelling theatre.

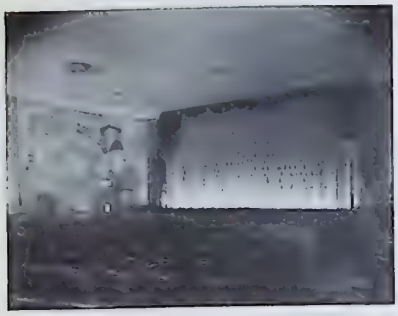
It is the right way to do "ALL YOUR CLEANING".





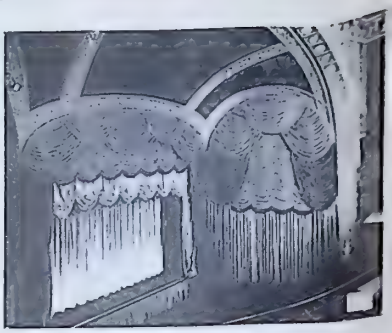
DIRECTLY ABOVE are only a half dozen of the many vacuum cleaning attachments which can provide for the removal of dust from almost any part of a theatre. At the right top, a workman uses a floor vacuum which is plugged into the wall. Dirt and dust are carried through a system of pipes to a vacuum producer and separator in the basement. A small 5-inch tool for chair backs is one of the many attachments. Directly to the right a man is using a plug-in vacuum for cleaning boiler tubes with a specially designed goose-neck tool. The plug-in outlet with cover closed is normally installed in sidewall baseboards.

BEAUTIFIED by NOVELTY SCENIC STUDIOS



(At Left) Designed by architect A. O. Budina, The Byrd Theatre, Arlington, Va. The front of the auditorium is pictured, the side walls of which feature montage murals depicting the historical background of Richmond. The stage drape is deep red with gold fringe, while the main draw curtains are coral and eggshell.

(At Right) The State Theatre, Jersey City, N. J. Executed under the personal direction of Jules W. Catsiff, General Purchasing Director, Skouras Theatres. A masterpiece of decoration. Has set a record as to the amount of material used in any one house. 10,000 yards of glass fibre material for luxury and splendor. 100 to 300 per cent fullness sewn into draperies.



A few Services we render:

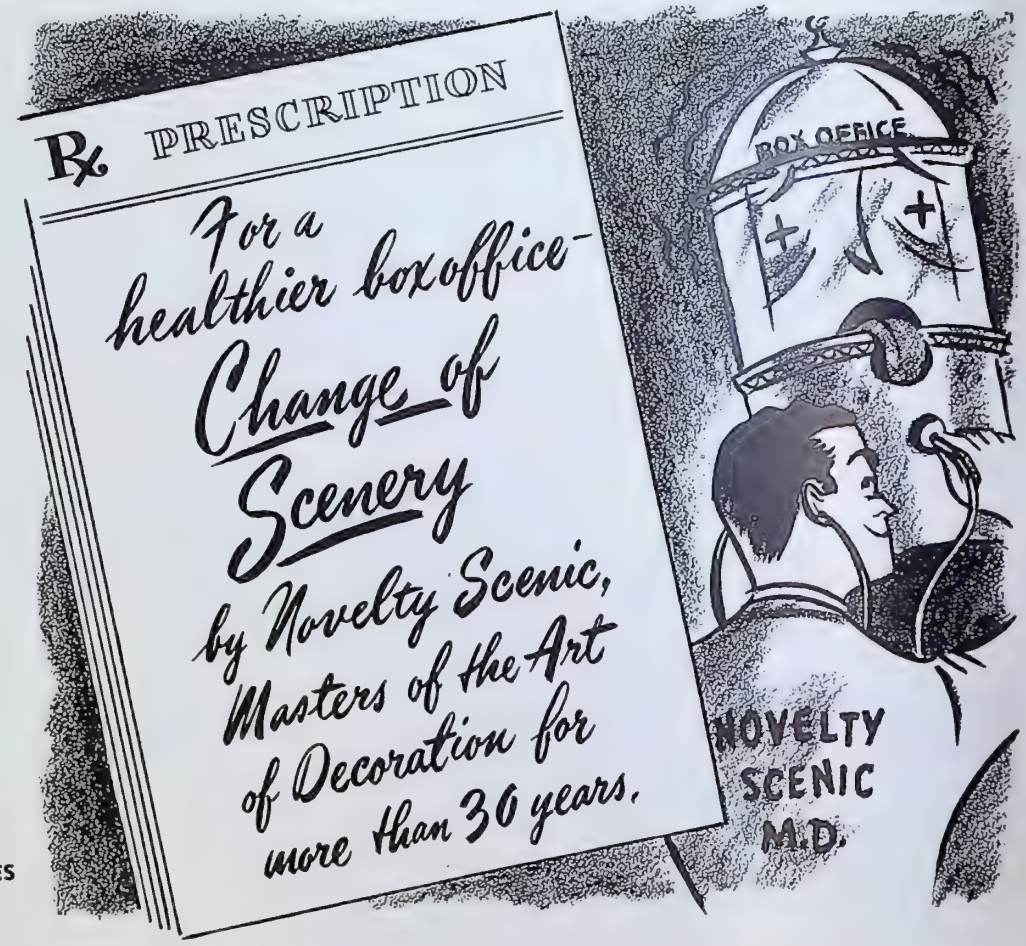
- DESIGN ARTISTS
- SCULPTORS
- ETCHERS
- SCENIC ARTISTS
- PAINTERS
- DRAPERY SPECIALISTS
- DECORATORS

Masters in the Art of

- WALL FABRICS
- MURALS IN PAINT
- ETCHED GLASS AND PLASTER
- STAGE AND AUDITORIUM DRAPERIES
- DISTINCTIVE DECORATION

for

- THEATERS
- SKATING RINKS
- HOTELS
- BALLROOMS
- NIGHT CLUBS
- COCKTAIL LOUNGES
- SCHOOLS
- CHURCHES



DECORATIVE PLANNING SERVICE *yours for the asking . . .*

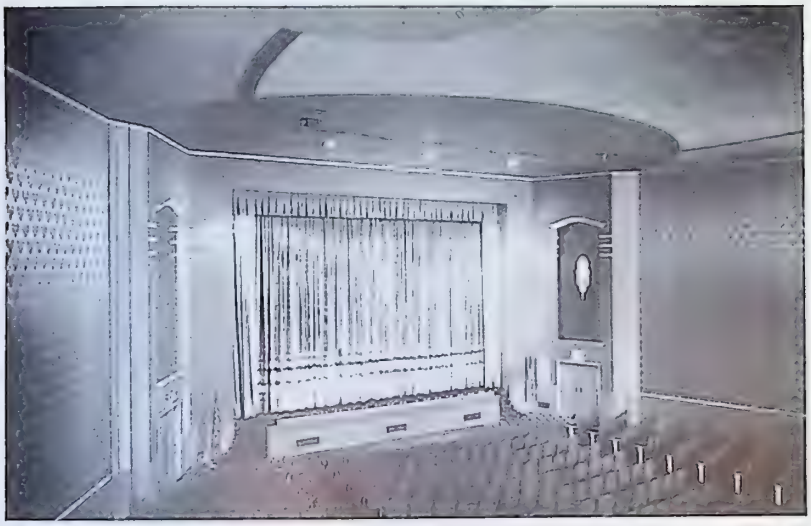
Some of the costs of decorative motifs can be avoided if an acceptable motif is taken into consideration in the original construction plans. Our DECORATIVE PLANNING SERVICE DEPARTMENT is capable of taking a set of rough, preliminary blueprints and not only submitting color renderings of several different interior motifs, complete with relative estimated costs; but when the final selection is made, can furnish construction details which can be incorporated into the finished plans.

In decoration, just as in insurance, automobiles, etc. . . . you get only what you pay for. A local sign painter can paint a mural. A neighborhood upholstery shop can make a drapery. But with no design knowledge, theatrical experience, or artistic ability, the resultant effect will be only a mediocre decorative interior. The theatre owner's objective, and the architect's duty, is to make each theatre an individual, patron-pleasing achievement in comfort and decoration. Only through an experienced organization with the needed facilities in many fields can this result be attained with the certain knowledge that all economies have been exercised. That is why DECORATIVE PLANNING SERVICE DEPARTMENT of the reputable NOVELTY SCENIC STUDIOS, INC., is consulted by hundreds of successful theatre and circuit owners and architects. We will welcome the opportunity to be of service to you.

Novelty Scenic Studios, Inc.

Masters of the Art of Decoration • 32-34 W. 60th St. • New York 23, N. Y.

Designed by Architects John and Drew Eberson, Beautified by Novelty Scenic Studios



THE CORAL THEATRE, BRADBURY HEIGHTS, MD. John and Drew Eberson, architects, New York. Opened recently with complete decoration by Novelty Scenic Studios.



The impressive front of pressed stone in an unusual treatment.



For estimates and color renderings, send rough sketches, blueprints or plans. Include measurements.



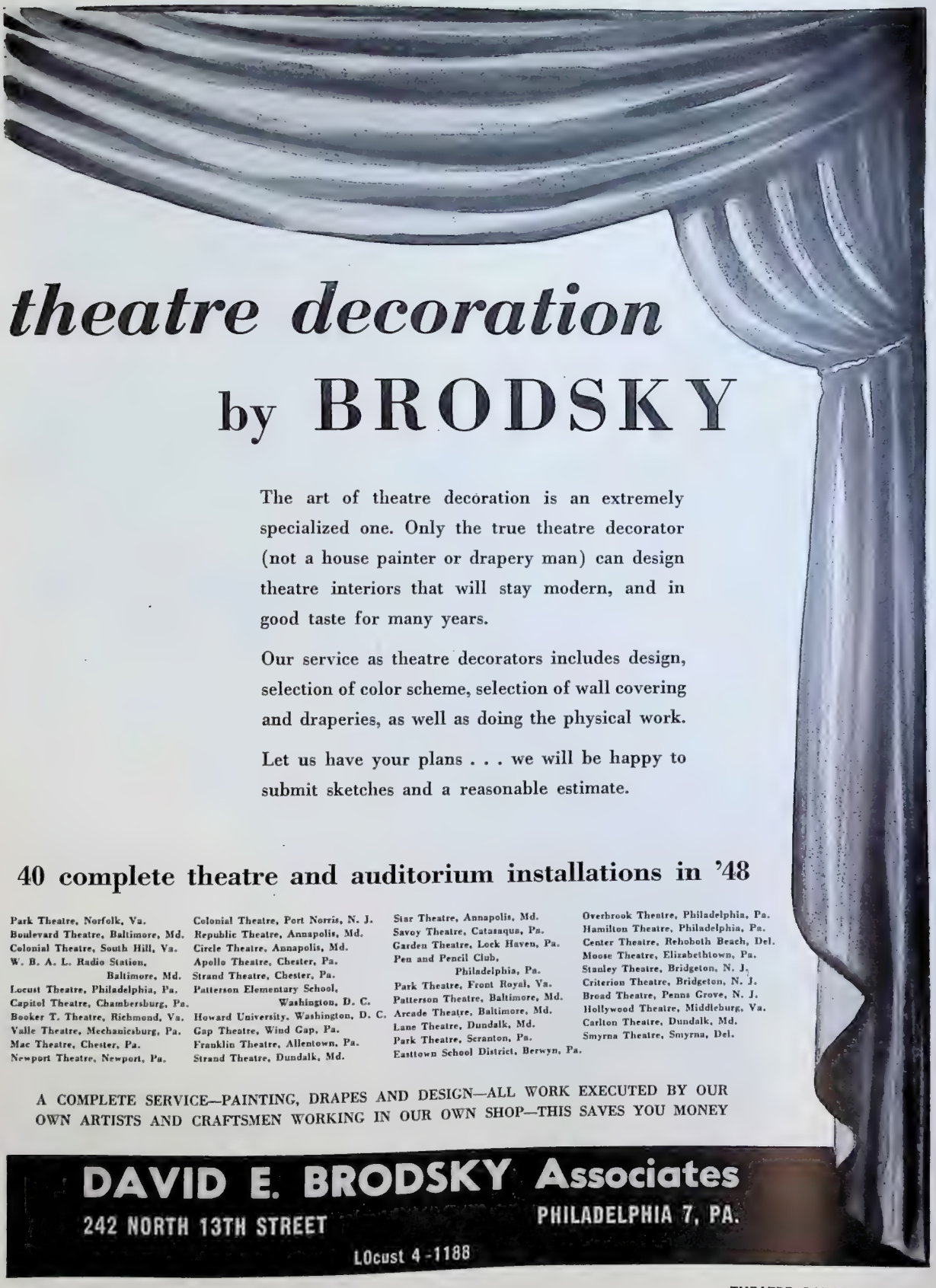
ABOVE—Under the balcony, the combination of wall fabrics gives an interesting contrast.

AT RIGHT—The inner lobby is acoustically treated with soft tan damask over rock wool.



★

Beauty in your theatre is Money in your box office



theatre decoration

by BRODSKY

The art of theatre decoration is an extremely specialized one. Only the true theatre decorator (not a house painter or drapery man) can design theatre interiors that will stay modern, and in good taste for many years.

Our service as theatre decorators includes design, selection of color scheme, selection of wall covering and draperies, as well as doing the physical work.

Let us have your plans . . . we will be happy to submit sketches and a reasonable estimate.

40 complete theatre and auditorium installations in '48

Park Theatre, Norfolk, Va.
Boulevard Theatre, Baltimore, Md.
Colonial Theatre, South Hill, Va.
W. B. A. L. Radio Station, Baltimore, Md.
Locust Theatre, Philadelphia, Pa.
Capitol Theatre, Chambersburg, Pa.
Booker T. Theatre, Richmond, Va.
Valle Theatre, Mechanicsburg, Pa.
Mac Theatre, Chester, Pa.
Newport Theatre, Newport, Pa.
Colonial Theatre, Port Norris, N. J.
Republic Theatre, Annapolis, Md.
Circle Theatre, Annapolis, Md.
Apollo Theatre, Chester, Pa.
Strand Theatre, Chester, Pa.
Patterson Elementary School, Washington, D. C.
Howard University, Washington, D. C.
Gap Theatre, Wind Gap, Pa.
Franklin Theatre, Allentown, Pa.
Strand Theatre, Dundalk, Md.
Star Theatre, Annapolis, Md.
Savoy Theatre, Catasaqua, Pa.
Garden Theatre, Lock Haven, Pa.
Pen and Pencil Club, Philadelphia, Pa.
Park Theatre, Front Royal, Va.
Patterson Theatre, Baltimore, Md.
Arcade Theatre, Baltimore, Md.
Lane Theatre, Dundalk, Md.
Park Theatre, Scranton, Pa.
Easttown School District, Berwyn, Pa.
Overbrook Theatre, Philadelphia, Pa.
Hamilton Theatre, Philadelphia, Pa.
Center Theatre, Rehoboth Beach, Del.
Moose Theatre, Elizabethtown, Pa.
Stanley Theatre, Bridgeton, N. J.
Criterion Theatre, Bridgeton, N. J.
Broad Theatre, Penns Grove, N. J.
Hollywood Theatre, Middleburg, Va.
Carlton Theatre, Dundalk, Md.
Smyrna Theatre, Smyrna, Del.

A COMPLETE SERVICE—PAINTING, DRAPES AND DESIGN—ALL WORK EXECUTED BY OUR OWN ARTISTS AND CRAFTSMEN WORKING IN OUR OWN SHOP—THIS SAVES YOU MONEY

DAVID E. BRODSKY Associates

242 NORTH 13TH STREET PHILADELPHIA 7, PA.

LOcust 4-1188



Greiwe creates decorative effects that are strikingly original, colorful and new . . . smart beauty that lifts theatre interiors out of the commonplace and wins patron approval.

Greiwe decoration is complete, it embraces every detail that contributes to an outstanding result . . . talented artists give minute attention to everything from wall finishes to lighting treatment.

And remember, Greiwe artistry is matched by Greiwe efficiency. Minimum interference with the operation of your theatre is achieved with equipment of the most modern type. With Greiwe . . . "the show goes on".

Consult Greiwe on any decorating plans . . . outstanding artists are at your service . . . color photos of theatres recently decorated will be shown on request. Write . . . wire or phone.

GREIWE SERVICE INCLUDES

- Interior walls and ceiling decoration
- Decorative over-lays
- Murals
- Plaster relief work
- Lighting treatment
- Lounge and lobby furniture
- Specially designed cases
- Carpeting—draperies
- Stage curtains
- Fabric wall covering

Inquiries are especially invited from theatres in Ohio, Indiana, Illinois, Michigan, Wisconsin, Kentucky, Pennsylvania, West Virginia and Tennessee.

GREIWE, INC. Decorators

2426 READING ROAD · CINCINNATI, 2, OHIO

HERE—

the creation of fresh themes IS AN EVERYDAY OCCURRENCE



A staff of design artists and highly qualified

Specialists

in

DECORATIVE PAINTING
DRAPERIES
INDIVIDUALLY PLANNED MURALS
WALL FABRICS
SPECTACULAR EFFECTS IN BLACK LIGHT
FIBERGLAS CEILINGS
LIGHTING EQUIPMENT
STAGE CURTAINS
CYCLORAMAS
PAINTED SETTINGS
CURTAIN TRACKS
AUTOMATIC CURTAIN CONTROLS
STAGE HARDWARE AND RIGGING

Sketches and quotations without obligation, regardless of the size of the job.

A wide range of the most modern materials always in stock.

IMMEDIATE SERVICE

KNOXVILLE *Scenic Studios* **INC**

P.O. BOX 412, KNOXVILLE 4, TENN.

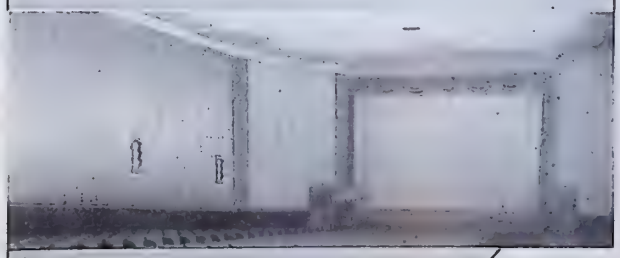
That's why Knoxville interiors are always unusual . . . always effective. Yet, Knoxville creates

Distinctive, Beautiful INTERIORS

Charming Atmospheric Effects

AT MODERATE COST

Complete INTERIOR DECORATING Service



the 1200th theatre
decorated by PARAMOUNT

WESTMONT THEATRE, Westmont, New Jersey



5 *words spell*

PARAMOUNT'S *success*

- ABILITY
- EXPERIENCE
- ECONOMY
- EFFICIENCY
- SERVICE

If you are building a NEW Theatre or modernizing an OLD one—consult PARAMOUNT—for the finest in theatre decorating—

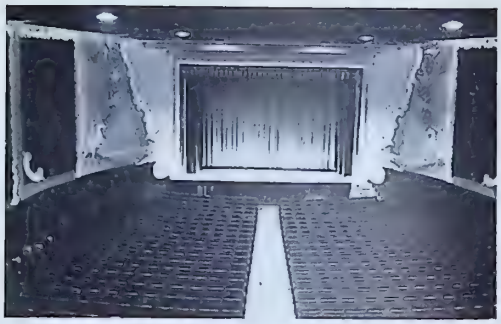
PARAMOUNT DECORATING CO., INC.

A Complete Theatre Decorating Service

311 NORTH THIRTEENTH STREET • PHILADELPHIA 7, PENNA.

FOR BEAUTY AND DURABILITY IN INTERIOR DECORATION







DISTINCTIVE INTERIORS

LIST OF THEATRES COMPLETED DURING THE LAST TWO YEARS

PLAZA THEATRE, Milford, Del.—*Architects:* John & Drew Eberson. CORAL THEATRE, Washington, D. C. —*Architects:* John & Drew Eberson. LAUREL THEATRE, Washington, D. C.—*Architects:* John & Drew Eberson. NATIONAL THEATRE, Washington, D. C.—*Architects:* John & Drew Eberson. CELINA THEATRE, Celina, Ohio.—*Architects:* John & Drew Eberson. LINDEN THEATRE, Brooklyn, N. Y.—*Architect:* John MacNamara. PATIO THEATRE, Brooklyn, N. Y.—*Architect:* John MacNamara. RIALTO THEATRE, Brooklyn, N. Y.—*Architect:* John MacNamara. MIDWOOD THEATRE, Brooklyn, N. Y.—*Architect:* John MacNamara. SUTTON THEATRE, Brooklyn, N. Y.—*Architect:* John MacNamara. DANIEL WEBSTER THEATRE, Nashua, N. H.—*Architect:* M. De Angelis. ASHTABULA THEATRE, Ashtabula, Ohio—*Architect:* M. De Angelis. AUDITORIUM THEATRE, Newark, Ohio—*Architects:* Alcox & Stritzel. MC KEAN THEATRE, Bradford, Pa.—*Architects:* John & Ed. Stotz. TOWER THEATRE, Bronx, N. Y.—*Owners:* Circle Circuit, Inc. STATE THEATRE, Jersey City, N. J.—*Owners:* Skouras Theatres. OCEANA THEATRE, Brooklyn, N. Y.—*Owners:* Rugoff & Becker. STATE THEATRE, Manchester, N. H.—*Owners:* Jamestown Amusement Corp. CAMBRIDGE THEATRE, Cambridge, Ohio, *Owners:* Jamestown Amusement Corp. GENEVA THEATRE, Geneva, Ohio—*Owners:* Jamestown Amusement Corp. SHEA'S BRADFORD, Bradford, Pa.—*Owners:* Erie Amusement Co.

SPECIALISTS IN INTERIOR DECORATION AND THEATRE EFFECTS FOR MORE THAN 25 YEARS

RAU STUDIOS, INC.

104 W. 42nd STREET • NEW YORK CITY, N. Y. • WI 7-3657

Designing • Decorating • Fluorescent Murals • Drapery Work
Leather Work • Ornamental Plaster Plaques


THEATRICAL
FABRICS by
DAZIAN'S
FOR STAGE CURTAINS
AUDITORIUM DRAPERIES
WALL COVERING
DAZIAN'S INC
ESTABLISHED 1842
142 W. 44 ST., NEW YORK 18, N. Y.
400 BOYLSTON ST., BOSTON 16, MASS.
125 N. WABASH AVE., CHICAGO 2, ILL.
731 SO. HOPE ST., LOS ANGELES 14, CAL.

Spot-lite Fabrics

by FRANKEL

At Frankel . . . you are always certain to find just the fabric you need . . . just when you need it. That's because we carry an unusually large and diversified stock of beautiful designs in a wide range of rich colors at all times . . . to which we are constantly adding interesting, new fabric designs.

Architects, Decorators, Drapery Studios and all others who use fabrics for decorating theatres, auditoriums, schools, night clubs, etc. are invited to call on us for samples and help in solving special problems in the fabric field. Remember, if it's a "Spot-lite" fabric . . . it will stand the glare of any spotlight.



GOTHAM DAMASK



PEMBROKE DAMASK



REGAL DAMASK

ALWAYS IN STOCK

Damasks, Velours, Satins, Plushes, Cyclorama Cloths, Screen Cloths, plain and printed Glass Fabrics, Tinsels and other decorative drapery fabrics.

ALL MATERIALS AVAILABLE FLAME PROOFED

F

Frankel Associates Inc.

Novelty and Decorative Fabrics

218 WEST 47th STREET, NEW YORK 19, N.Y.

LOS ANGELES OFFICE, 819 SANTEE ST.

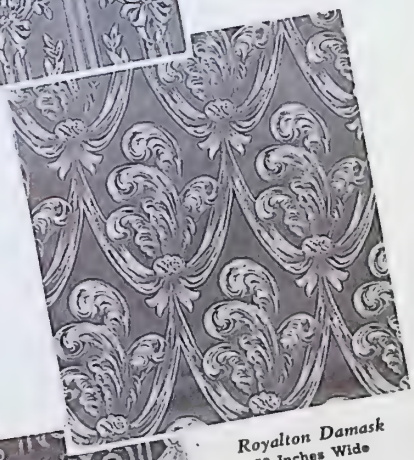
Fabrics

for

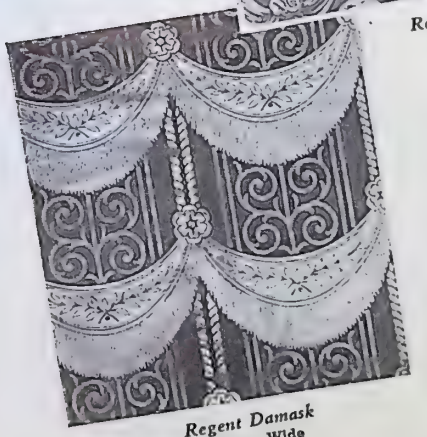
THEATRE DRAPES
STAGE CURTAINS
WALL COVERINGS
LOBBIES



Lyric Damask
50 Inches Wide



Royalton Damask
50 Inches Wide



Regent Damask
50 Inches Wide

The Patterns Shown Above
Are Available in
Beautiful Color Combinations

FOR many years, America's leading theatre architects and scenic studios have recognized our organization as *the* prime source of supply for Decorative Fabrics. They know Maharam sets the pace in the creation of new and distinctive designs and weaves. In fact, we're boastfully proud of our ability to execute in fabric *any* theme of the designer or architect. So whether it be for a theatre, auditorium, ballroom, cocktail lounge or supper club, our complete line of Decorative Fabrics can fulfill your need.

Throughout this volume are shown several Maharam Fabric designs currently in use in America's newest DeLuxe theatres. On this page we present our LYRIC, ROYALTON and REGENT DAMASKS — available in a full range of beautiful colors. These attractive damasks have been designed and created primarily for use as theatre wall-covering and stage draperies.

For samples or further information, consult your architect, decorator or nearest Maharam Branch.

Maharam Fabrics Include:

DAMASKS, VELOURS, PLUSHES, METALLIC CLOTHS, REPPS, FIBERGLASS FABRICS, NOVELTY WEAVE SILKS and SATINS

Decorative Materials for Lobbies:

CHROME MOULDINGS, SPARKLE and JEWEL CLOTHS, LEATHERETTES, DECORATIVE PAPERS and NOVELTIES

"The House of Service"

MAHARAM
FABRIC CORPORATION

NEW YORK, 130 West 46th Street

CHICAGO	115 So. Wabash (Wurlitzer Bldg.)
LOS ANGELES	1113 So. Los Angeles St.
ST. LOUIS	927 Century Building

From Basic Plan to Finished Stage

ONE CONTRACT • ONE CONTRACTOR
ONE COMPLETE SERVICE

Guaranteed

Central Theatre, Passaic, N. J.
Designed by
John and Drew Eberson
Architects

Stage by
J. R. CLANCY, INC.



This complete vaudeville stage is outstanding for its compactness and flexibility, a feature of which is the motorized band car operating without guides in the floor. It is typical of the work done by the famous theatre architects, John and Drew Eberson. It is one of many such fine stages which we have had the pleasure of equipping during our years of working with the Ebersons.

Regardless of size or design of your stage, Clancy can furnish the complete rigging from standard catalog items produced on a production basis by modern production methods — a fact that means lower costs and better equipment. Every step in production is carefully controlled — even to the extent of having materials checked by consulting metallurgists as extra assurance of strength and safety. All plans made by a licensed engineer.

To assure compactness, flexibility and safety of your stage, take advantage of Clancy's one contract — one contractor — one complete service — and a guarantee covering our entire operation.

World's Largest Designers, Manufacturers and Riggers of Stage Equipment

J. R. CLANCY INC.
1000 W. Belden Ave.
SYRACUSE 4, N. Y.

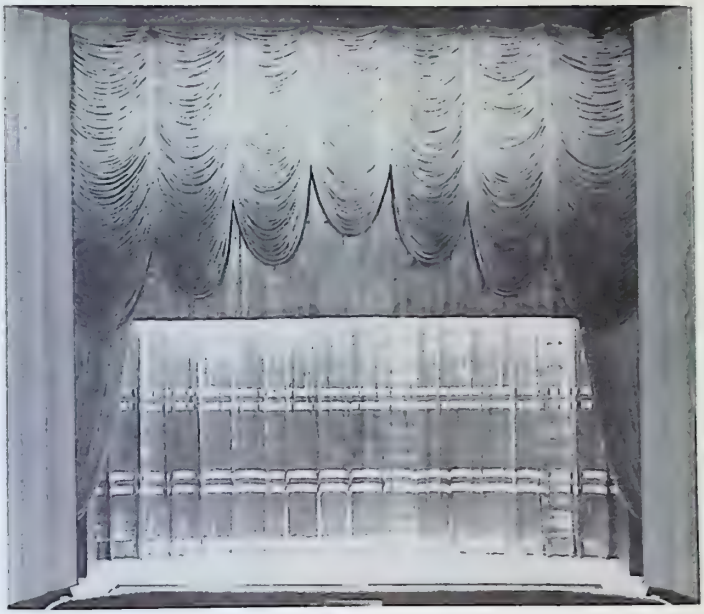
- *Television Studio Equipment*
- *Asbestos Curtains*
- *Clancy Contour Curtains*
- *Olio and Painted Drops*
- *Cycloramas*
- *Auditorium Drapes*
- *Interior Flats*
- *Curtain Tracks and Controls*
- *Console and Orchestra Lifts*
- *Wagon and Revolving Stages*
- *Picture Screens*
- *Counterweight Equipment*
- *Lighting Equipment*
- *Bull Wheels*
- *Magnascopes*
- *Electric Winches*
- *Motor Controls*
- *Traction Drive Equipment*
- *Sound Horn Trucks and Cradles*
- *Flying Microphones*

Combine Beauty and Efficiency

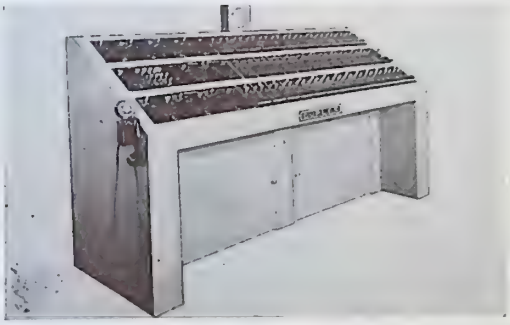
We also offer a selection of

Spotlights • Border Lights Footlights • Follow Spots and a complete line of stage hardware and curtain tracks

Whatever your problem, our skilled staff of technical experts will assist you. Please don't hesitate to call or write.

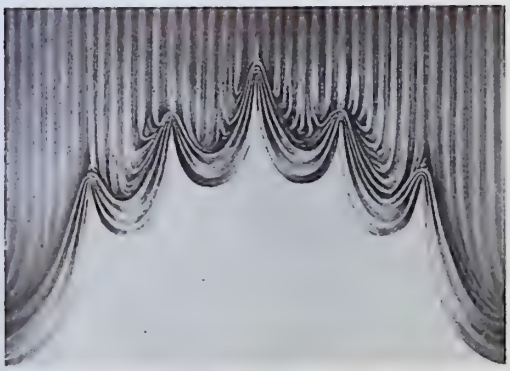


Beautiful stage draperies at Music Hall, Kansas City . . . a Great Western Installation.



DUPLEX ELECTRONIC CONTROL BOARD. Newly developed. Provides every essential of perfect lighting! Easy to operate. Flexible. Low maintenance cost. Features one man operation of entire lighting system.

VARIFORM CURTAINS for beauty and individuality. Variform represents the highest pinnacle of achievement in stage curtains. A tiny opening, a full stage, or any variation in between (beautifully draped and festooned) is available at the touch of a finger, all made possible by the Variform design and the magic of the Duplex Curtain Control Board.



DRAPERIES. For over 30 years Great Western has served theatres with the largest selection of house draperies in the widest variety of colors and with new interest in texture and design. Our skilled personnel produces these beautiful draperies for the finest theatres and auditoriums . . . efficiently . . . economically.



OUR 1949 CATALOG AVAILABLE ON REQUEST

GREAT WESTERN STAGE EQUIPMENT CO.

1324 GRAND AVENUE **Phone Victor 9078** KANSAS CITY 6, MO.

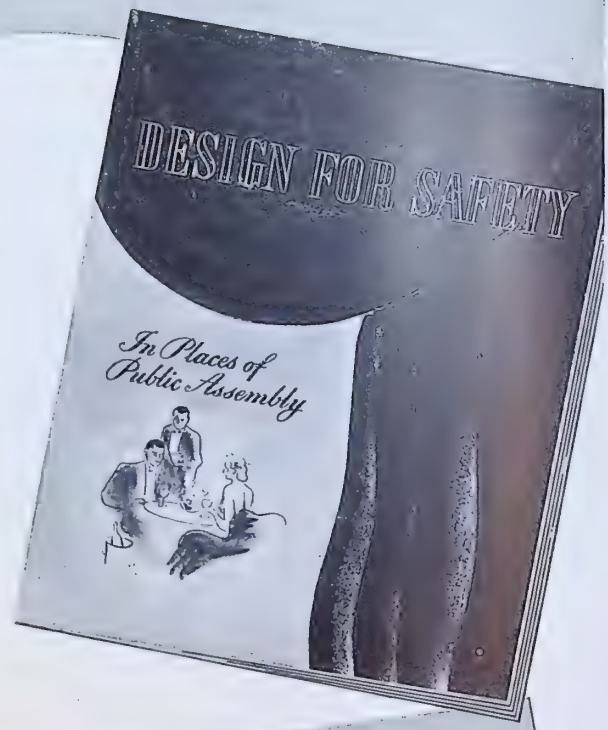
One more fire hazard can now be eliminated with practical, decorative, noncombustible* fabrics

Fires can't start—or spread—in fabrics woven from *Fiberglas Yarns*—because Glass Won't Burn!

Most disasters and loss of life and property from fire occur from the rapid spread of flames through materials that burn. Now one big step toward safety in places of public assembly is being made with the installation of draperies and decorative hangings woven from Fiberglas Yarns. Being glass, they will not burn—or deplete the oxygen in the air—or give off suffocating smoke and fumes.

You'll want this book reproducing full-color photographs of installations of these fabrics of Fiberglas Yarn in schools, hotels, restaurants, night clubs and other places of public assembly where firesafety is being fostered.

*Listed by Underwriters' Laboratories, Inc., as "Noncombustible Fabric"



Send coupon for your FREE copy today

OWENS-CORNING FIBERGLAS

U.S. REG. U.S. PAT. OFF.

Owens-Corning Fiberglas Corporation
Dept. 994, Toledo 1, Ohio
Please send me a copy of your booklet:
"Design for Safety"

_____

_____



Performance

The name "Vallen" has a background of 34 years devoted exclusively to the planning, research, development and engineering of Stage Installations.

Vallen has correctly designed *Noiseless* Curtain Controls, Tracks and Special Operating Devices for *every* Stage, regardless of size.

Constant striving for perfection, together with the necessary technical skills and production facilities, has earned for Vallen the reputation of . . .

"WORLD'S LEADING MAKER"

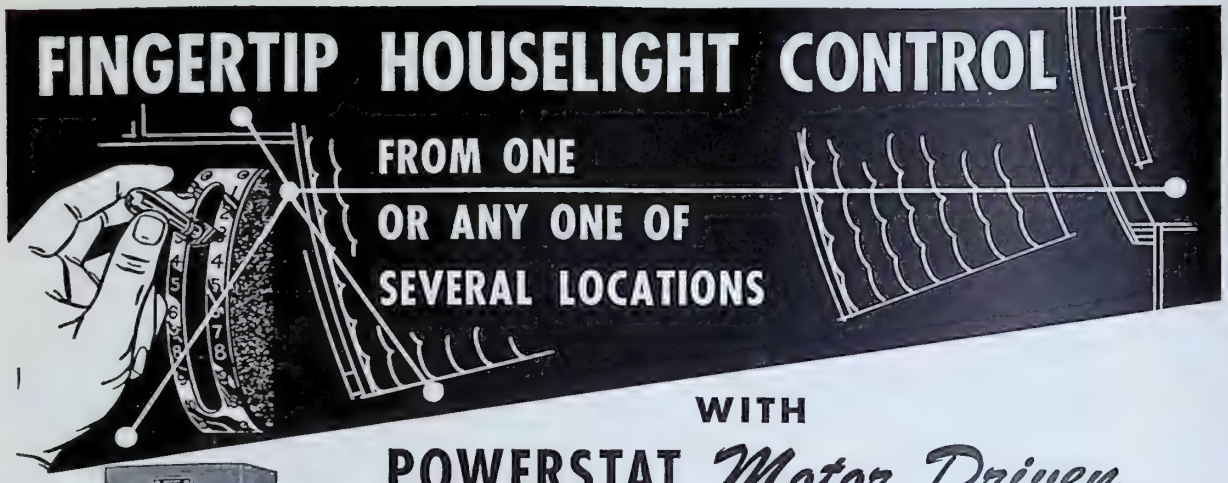
Contact Vallen for the solutions to *YOUR* individual equipment problems.

THE SEAL OF 11 LEADERSHIP
Vallen
TRADE MARK REGISTERED
WORLD'S LEADING MAKER OF CURTAIN CONTROLS AND TRACKS

VALLEN, INC.

AKRON, OHIO

FINGERTIP HOUSELIGHT CONTROL



FROM ONE OR ANY ONE OF SEVERAL LOCATIONS

WITH POWERSTAT *Motor Driven* THEATRE DIMMERS

One finger—operating a pushbutton or positioner—can control the houselights or other circuits in your theatre—from one or any one of several remotely-located stations. Motor-Driven POWERSTAT Theatre Dimmers permit Manager, Projectionist, Head Usher or others to instantly brighten or dim houselights or other circuits—from full-on to complete blackout. Incandescent or cold cathode installations can be handled with equal economy, efficiency and precision. Since POWERSTAT Theatre Dimmers are continuously adjustable autotransformers, many desirable characteristics are inherent. Lamp brilliancy is not affected by the number in operation; any number of lamps up to full load rating can be dimmed from full-on to blackout; a low operating temperature is maintained.

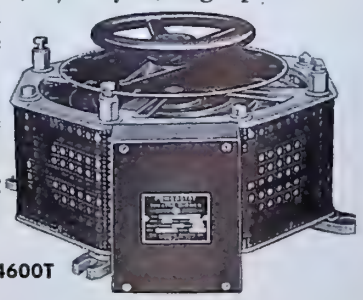


Type DMW4600T-3E

Non-interlocking, interlocking and "packaged" types are available. Non-interlocking Types D1700 and D4600T, illustrated, are the basic units of the line. They are Underwriters' approved for 115 volt, 50/60 cycle, single phase, continuous duty, with outputs of 0-1700 and 0-4600 watts respectively. Either of these non-interlocking dimmers can be ganged to operate from a single shaft for multiple-circuit control or higher ratings. All types are offered for motor-driven or manual control. Motor-driven Type DMW4600T-3E, above, controls three circuits with a total output of 13,800 watts.



Type D1700



Type D4600T

POWERSTAT "PACKAGED" DIMMERS

Portable, multi-circuit dimmer units, "packaged" for school, community, amateur group and small theatre use. Simple installation, minimum maintenance, overload protection and easy, economical operation are features of these POWERSTAT Dimmers.



Type DBP3-1700

Three individual, continuously adjustable autotransformer dimmers in an attractive black, wrinkle-finished cabinet. Each unit can be mechanically interlocked to a master control for group operation.

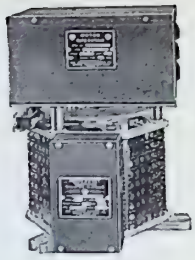
Portable, non-interlocking unit; 6 dimmers in one case. Separate fuse protects each circuit. Individual "on-off" switches, indicating lights and output receptacles for easy operation.



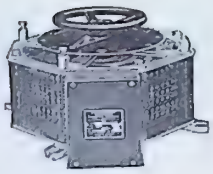
Type DBR6-850



Type D1700



Type DM1700T



Type D4600T

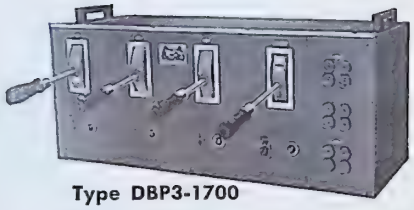


Type DM4600

POWERSTAT THEATRE DIMMER RATINGS

NON-INTERLOCKING POWERSTAT DIMMERS *find their widest application in controlling auditorium and theatre houselights where only a few circuits require dimming. Standard units are available in capacities from 1700 to 27,600 watts for 2 or 3 wire single phase service. All types are offered with motor drives for remote pushbutton or positioner control. Speeds of travel from blackout to full-on are 6, 14, 19 and 45 seconds.*

TYPE	INPUT VOLTS	NO. OF CIRCUITS	WATTS PER CIRCUIT	TOTAL (WATTS) OUTPUT	FREQUENCY	APPROX. DIMENSIONS (INCHES)		
						HEIGHT	WIDTH	DEPTH
D1700	115	1	1700	1700	50/60	8 3/16	8 1/16	8 1/8
D4600	115	1	4600	4600	50/60	8 3/8	14	15 1/8
D4600-2P	115	1	9200	9200	50/60	17 1/8	16 1/2	15 1/8
D4600-3P	115	1	13800	13800	50/60	25	16 1/2	15 1/8
D4600-4P	115	1	18400	18400	50/60	36	16 1/2	15 1/8
D4600-6P	115	1	27600	27600	50/60	51 3/4	16 1/2	15 1/8
D1700-2E	115	2	1700	3400	50/60	14 1/2	8 1/16	8 1/8
D1700-3E	115	3	1700	5100	50/60	20 3/4	8 1/16	8 1/8
D4600-2E	115	2	4600	9200	50/60	17 1/8	14	15 1/8
D4600-3E	115	3	4600	13800	50/60	25	14	15 1/8
D4600-4E	115	4	4600	18400	50/60	36	14	15 1/8
D4600-5E	115	5	4600	23000	50/60	43 7/8	14	15 1/8
D4600-6E	115	6	4600	27600	50/60	51 3/4	14	15 1/8
D4600-2E2P	115	2	9200	18400	50/60	36	16 1/2	15 1/8
D4600-3E2P	115	3	9200	27600	50/60	51 3/4	16 1/2	15 1/8
D4600-2E3P	115	2	13800	27600	50/60	51 3/4	16 1/2	15 1/8



Type DBP3-1700

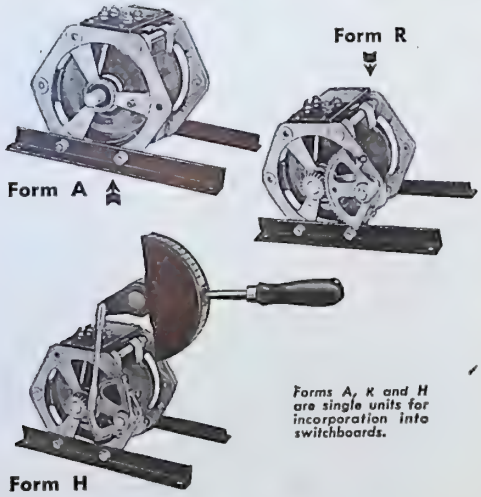
PORTABLE "PACKAGED" DIMMERS

Designed for use in small theatres and by amateur theatrical groups. Compact, portable, low cost and easy to install and operate.

DBP3-1700	230/115	3	1700	5100	50/60	15 1/8	36 1/8	13

DBT3-1700 Same ratings as DBP3-1700 but furnished with twist-lock receptacles instead of pin receptacles.

DBR6-850	230/115	6	850	5100	50/60	14 1/2	18 7/8	9 1/4



Forms A, K and H are single units for incorporation into switchboards.

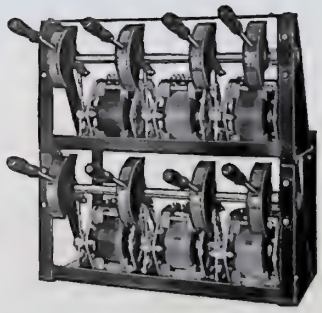
INTERLOCKING DIMMERS FOR SWITCHBOARDS

Interlocking POWERSTAT Dimmers are ready for immediate installation in lighting control switchboards. They are generally employed for stage lighting control. Two ratings are offered in various forms.

TYPE	INPUT VOLTS	NO. OF CIRCUITS	WATTS PER CIRCUIT	TOTAL OUTPUT (WATTS)	FREQUENCY	APPROX. DIMENSIONS (INCHES)		
						HEIGHT	WIDTH	DEPTH
D1700A	115	1	1700	Output	50/60	7 5/16	7 11/16	11 3/4
D1700R	115	1	1700	Depends	50/60	7 5/16	7 11/16	11 3/4
D1700H	115	1	1700	On	50/60	7 5/16	7 11/16	11 3/4
D1700J1	115	As Req'd	1700	Number	50/60	14 1/4	*	12
D1700J2	115	As Req'd	1700	Of	50/60	28 1/4	*	12 1/4
D4600A	115	1	4600	Units	50/60	15 1/16	6 3/16	14 3/16
D4600R	115	1	4600	Used	50/60	15 1/16	6 3/16	14 3/16
D4600H	115	1	4600	In	50/60	15 1/16	8	14 3/16
D4600J1	115	As Req'd	4600	Switch-	50/60	17 5/8	*	14 3/8
D4600J2	115	As Req'd	4600	board	50/60	36 5/8	*	14 3/4

A: Dimmer with shafting and tension blocks.
R: Dimmer with shafting, gearing and tension blocks.
H: Dimmer with shafting, gearing, linkage, drum and handle, and tension blocks.
J1: Single bank of Form H dimmers, factory-framed.
J2: Double bank of Form H dimmers, factory-framed.

*Depends on number of dimmers required.



INTERLOCKING POWERSTAT DIMMER ASSEMBLIES

Single dimmers or factory-framed assemblies for multi-circuit control are offered in various forms for incorporation as switchboard components. Ruggedly constructed, with the superior features found only in continuously adjustable autotransformer dimmers.

D1700 Form J2 consists of two banks of Form H dimmers, factory-framed for switchboard installation.

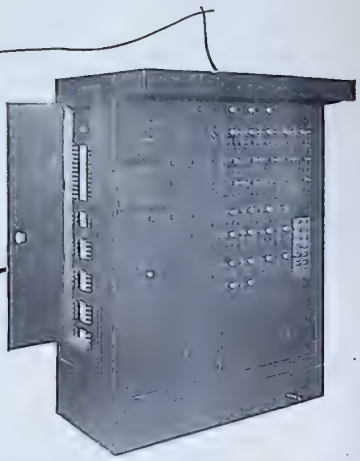
FOR FULL DETAILS WRITE 8000 DEMERS AVENUE

THE SUPERIOR ELECTRIC CO.
BRISTOL, CONNECTICUT

POWERSTAT VARIABLE TRANSFORMERS • VOLTBOX A-C POWER SUPPLY • STABILINE VOLTAGE REGULATORS



Ⓕ Stage Lighting Controls



Typical Ⓕ Electronically controlled Pilot Switchboard. Constructed on the unit basis, this Board is easy to operate, permitting controls to be set in advance and operated by a single control lever, instead of the use of many hands. Only a minimum of stage space is required and maintenance costs are exceedingly low through elimination of moving parts and undue friction.

More than 50 years of specialized experience in theatre lighting and control has enabled Frank Adam to produce quality equipment ideally suited to the needs and demands of the smallest to the largest theatre or auditorium . . . **and for almost 30 years it has been our privilege to supply Frank Adam Lighting Control Systems for projects designed by Messrs. John and Drew Eberson.**

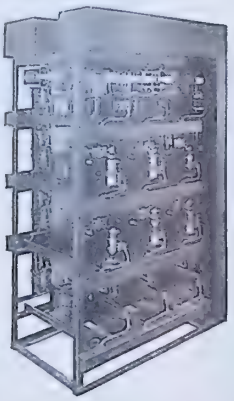
Frank Adam Stage Lighting Control Switchboards are available either for manual or electrical operation or with electronic controls. Consult a Ⓕ representative, conveniently located in most of the large cities of the country, for complete details.

Frank Adam builds a wide range of Control Switchboards . . .

Manual Control
Modified Pre-Set Remote Control
Multiple Pre-Set Remote Control
Electronic Tube Control
Mobile Color Lighting Controls

. . . And with three types of Dimming Control Equipment . . .

Resistor
Auto-Transformer, or
Reactor Type Dimmer



View of Remote Switchboard Assembly showing Reactance Dimmers and Hysterset units with thermeonic vacuum tube control, which provides pre-selective lighting intensity with almost instantaneous reaction to the operation of the control element and a dimming control system capable of controlling a wide range of connected loads on each circuit.



Typical Board for controlling lighting from sub-stations located at various points in the theatre or auditorium — another Ⓕ Stage Lighting control feature.

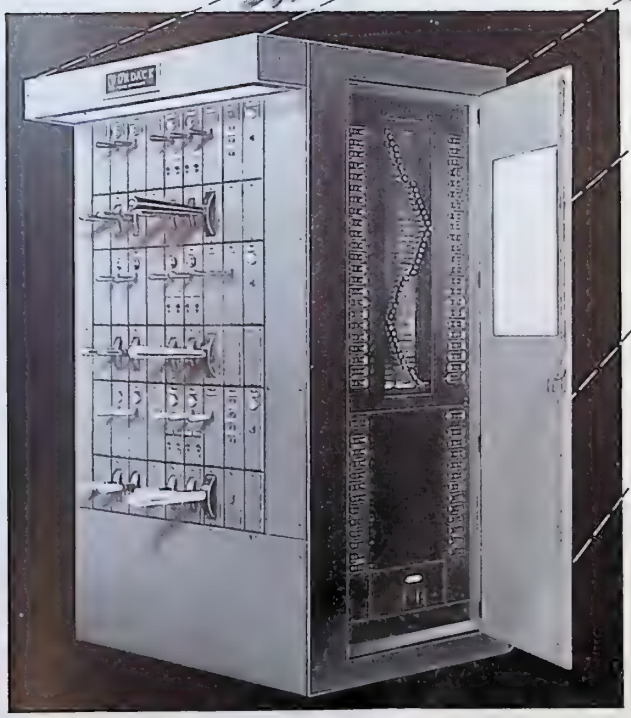
Frank Adam Electric Co.
ST. LOUIS 13, MO.

An Angel in the Wings...

WURDACK "*Flexi*"

PILOT AND DIMMER CONTROL





Modern Theatre technique, employing the most elaborate and complex lighting effects, demands control equipment that provides absolute flexibility and utmost simplicity of operation.

The Wurdack Flexi Pilot and Dimmer Control meets the most exacting requirements. It provides a wide range of flickerless, smooth dimming. It will materially reduce your electrical losses.

Wurdack Control units are unsurpassed in flexibility. Their dimming unit—a special cross-connecting panel built in as part of the switchboard—permits grouping of any chosen circuits to any desired dimmer or dimmers.

Any desired effect called for by the light plot can be achieved and the operation is simple, positive and fool-proof. There are no cords, plugs or jacks—no guess work—no embarrassing mistakes.

The Wurdack Flexi Control is the ideal switchboard for all types of theatres and stages. It is especially well suited to night clubs, lodges, dramatic centers, schools, colleges and universities—wherever lighting has to be manipulated. Write for further details. Wm. Wurdack Electric Division of Federal Electric Products Co.

Wm. Wurdack Electric Division
of

FEDERAL ELECTRIC PRODUCTS COMPANY

4444 Clayton Ave.
St. Louis 10, Mo.

Representatives in Principal Cities

Get the balanced lighting effects you've always wanted with **CONTROLITE** improved Autrastat dimmer control



Trumbull recently built the largest oil hydraulic controlled stage switchboard in the world for Philadelphia's Convention Hall. Whether your needs are as complex — or as simple as a 1 circuit control — Trumbull will tailor-make the most efficient dimming system for your requirements.

You're in a theatre like your own, only bigger. Same seats, same layout, same Mr. and Mrs. Audience. Yet there's a difference, and you know why. Lighting. This theatre gets all the balanced lighting effects you've always wanted. So you look for the owner to find out how. And the answer is Controlite.

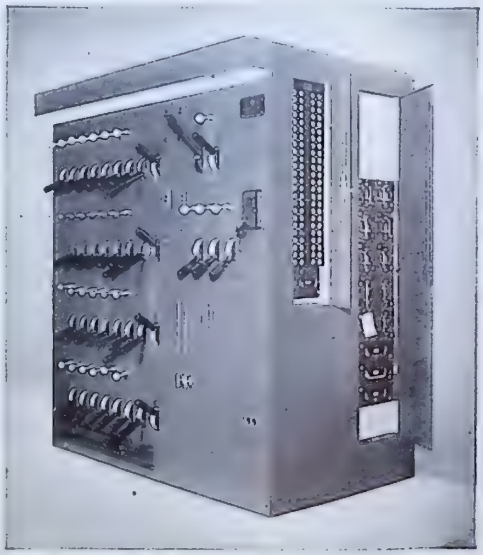
You learn that Controlite's compact design saves space . . . means easy operation because its switching, dimming and circuit protection equipment are all in one compact enclosure. You ask more questions. How does it operate, for instance? And you find that you can dim lights individually or in combinations. He tells you how quickly fingertip control switches make the set-up . . . how you'll save more time when you pre-set your lights so that a scene or presentation can be set up in advance on the Controlite board. You like that, too.

Then you notice that there's no heat dissipation, so you ask about that. You discover the secret of the improved Autrastat dimmer control . . . how it changes the voltage to dim, instead of increasing the resistance and wasting current as heat. No wonder it's a cool board.

But before you leave, you check one thing more. What about expansion? Is it expensive? That's the beauty of Controlite, he tells you; you can add new equipment or make revisions without paying for a costly change.

You say thanks, leave, and wish you'd known about Controlite long ago.

Send for free bulletin. THE TRUMBULL ELECTRIC MAUFACTURING COMPANY, Plainville, Connecticut.



Front and side view of Trumbull Controlite with Autrastat control showing how all the main and branch circuit protections are incorporated into one composite stage switchboard. Note the compact arrangement of all dimming and switching controls.

Be RIGHT with CONTROLITE

TRUMBULL (T) ELECTRIC

theatre dimmers

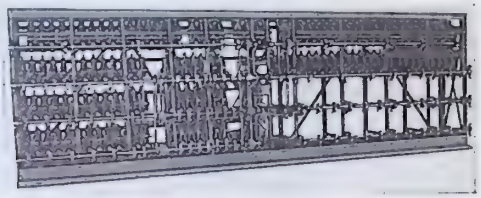


RADIAL TYPE

A NEW AUTRASTAT DIMMER

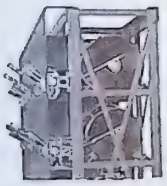
New Radial Type Autrastat Dimmer for theatre lighting control has all the desirable features of the rectangular type (continuous duty at any setting . . . lamp voltage independent of load . . . uniform dimming curve . . . low core loss . . . and low operating temperatures) *plus* several outstanding improvements.

Designed for manual or remote operated applications, Radial Type Autrastat is available in all types of mounting and frameworks. Its toroidal core and coil reduce core losses to an absolute minimum . . . permit more efficient operation. Large solid brass contacts give greater capacity (better commutation without oxidation). Multiple shoe construction of silver graphite—self-lubricating and self-cleaning—assures good arcless contact. Oil-less center bearing reduces operating torque to a minimum and lowers maintenance cost. Available in capacities up to 8000 watts in a single unit.



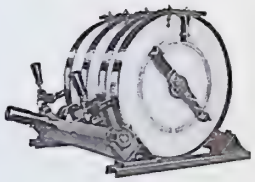
RADIAL TYPE BANK

Radial Type Autrastat Dimmer Bank, with oil hydraulic slow-motion cross control, typical of large auditorium installation. Bank shown has a capacity of more than one million watts.



AUTRASTAT DIMMER BANKS

Auto - transformer type dimmers operating on 110-120 volt 50-60 cycles A.C. Voltage applied to lamp circuit can be adjusted for any intensity. May be interlocked and arranged in banks for manual or motor drive. Ideal for Controlite (composite stage switchboard) construction. Write for Bulletin 76.



TYPE RD INTERLOCKING DIMMER BANKS

Resistance type dimmers assembled in frames for floor, wall or other types of mounting. Each dimmer plate equipped with interlocking lever for master control or grand master control of several tiers of dimmers. Double interlocking masters and worm wheel, slow motion cross control may be had. Write for Bulletin 72.



REACTANCE DIMMER BANKS

Hysterset ("Electronic") reactance type dimmers for Theatre Lighting Control have miniature control devices permitting use of small pilot control switchboards of desk, Console or panel type. As many pre-set controls may be provided as the system and installation warrant. No heavy moving parts — minimum of maintenance. The most modern system for the modern theatre. Write for Bulletin 74.



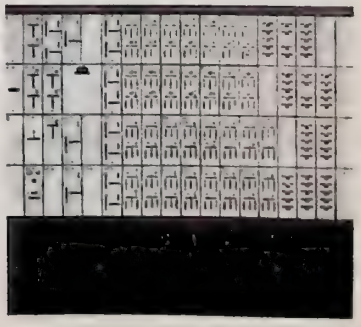
TYPE SRD NON-INTERLOCKING DIMMERS

Resistance type for small theatres, churches, etc.—for front or rear of wall mounting. When ordering, specify type of mounting, total wattage of connected load, voltage, whether two or three wire. Write for Bulletin 71.



TYPE BD DIMMERS

Resistance type, suitable for portable switchboards or motion picture studios. May be arranged for wall or floor mounting. Write for Bulletin 71.



WARD LEONARD DIMMERS HAVE BEEN EXCLUSIVELY SPECIFIED FOR ALL INSTALLATIONS DESIGNED BY JOHN AND DREW EBERSON.

WARD LEONARD

Result-Engineered Controls

RELAYS
RESISTORS
RHEOSTATS

WARD LEONARD ELECTRIC COMPANY

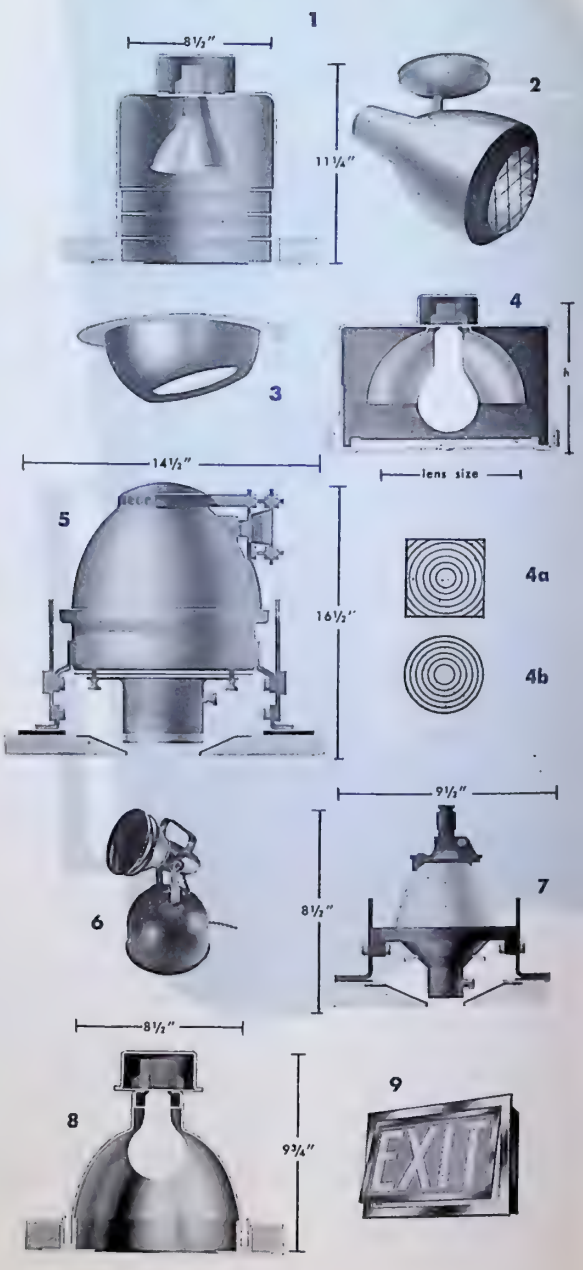
86 SOUTH STREET, MOUNT VERNON, N. Y. • OFFICES IN ALL PRINCIPAL CITIES

CENTURY

LIGHTING FOR THE THEATRE

THEATRE INTERIOR LIGHTING

		CAT. NO.	LIST
1 BAFFLE DOWNLIGHT* Recessed in ceiling with flush ceiling plate. Internal baffles create low fixture brightness and give 45 degree cut-off. Uses efficient PAR-38 or R-40 flood lamps		388	$18.00
2 NEW DRAMALITE* Functional form accommodates the PAR-38 and R-40 lamps. Completely adjustable in all directions by concealed swivel joints. New egg-crate louvre gives positive cut-off at 45 degrees. Ceiling or wall mounted. Portable, pendant and flexarm models also available.		942	9.50
	egg-crate louvre	extra	3.00
3 NEW EYEBALL* A simple and compact fixture using the PAR-38 lamps. Adjustable in any direction up to 45 degrees off the vertical. Requires only 6¼" depth above the ceiling line.		362	21.00
	concentric ring louvre	extra	1.50
4 FRESNELITE DOWNLIGHTS* Built-in recessed square and circular lens units. Economical general service lamps are augmented by precision aluminum reflectors in unit.			
4a square lens	6½ inch, 7½", 60-75	2222	19.50
	8½ inch, 11-3/16", 100-200	2221	21.84
	12 inch, 11¼", 300-500	2220	24.50
4b circular lens	3 inch, 6½", 60	2203	13.20
	6 inch, 8⅜", 60-100	2201	14.50
	8 inch, 8¾", 100-150	2202	19.70
	10 inch, 10¼", 150-200	2210	22.00
	12 inch, 10¼", 100-300	2212	26.50
	14 inch, 11¼", 200-300	2214	30.80
5 PROJECT-O-LITE Completely recessed powerful downlight with 3½ inch aperture. Wired for 250 or 400 watt G30 bulb. Built-in 4-way framing shutters, objective lens and alzak reflector.			
	Bottom access type with flush plate.	1653	66.00
	Top access type with plaster cone.	1654	60.50
6 U-V BLACK LIGHT Ultra violet light units for use with fluorescent murals, carpeting, etc. Uses 100 watt AH4 or EH4 mercury vapor lamp. Includes Transformer, filter and lamp.		331	42.00
7 PROJECT-O-LITE Low voltage, low wattage "pinhole downlight" with sharp or soft edged beam. 1½ inch aperture. Fixed spread of either 0.7 or 1.5 feet per foot distance (specify which). Complete with transformer for 50 candlepower 6 volt lamp.			
	Top access type with plaster cone.	1662	34.00
	Bottom access type with flush plate.	1663	40.00
8 REFLECTOR DOWNLIGHT* Uses economical 75 or 100 watt general service lamp in alzac aluminum reflector to get maximum light within a 90 degree cone. Low brightness from angles of less than 45 degrees. Recessed, with flush ceiling plate.		932	19.50
9 EXIT LIGHT Recessed fixture with brushed chrome or bronze finish frame, ruby glass sign. 19¼" x 13½" over-all. 8" letters.		2297	26.50



(Lamp bulbs not included unless otherwise stated)

10

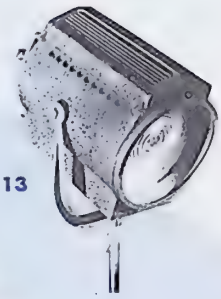




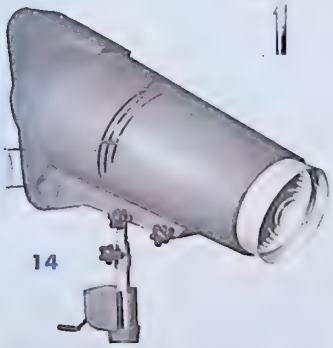
11



12



13



14



15



16

	CAT. NO.	LIST
10 FOOTLIGHTS Disappearing type, constructed in 5'2" sections. Kiln dried maple wood cover with individual aluminum alzak finish reflectors. Heat resisting color roundels in red, white, and blue. Mercury on and off switches. Splice box for feed.		
Twelve 60 watt outlets	**846M**	**$80.00**
Nine 75 to 150 watt outlets	**843M**	**85.00**

11 BORDERLIGHTS Individual reflector types with aluminum alzak finish reflectors. Red, amber, green, white or blue heat resistant roundels. Complete with chain hangers and splice box.

Outlet Centers	Wattage		
6 inch	75-150	450	price on application
8 inch	200	455	
12 inch	300-500	460	

12 LEKOLITES* Highly efficient alzak reflector spotlights. With 4-way beam framing shutters, yoke and base or clamp; metal color frame; heat resisting condensing lens; and asbestos lead. Iris shutter can be substituted for 4-way framing shutter.

Lens Diam.	Wattage		
8 inch	1000-1500-2000	1565S	110.00
8 inch	250-500-750	1575	75.00
6 inch	250-500-750	1591	55.00
4½ inch	250-500-750	1581	50.00

13 FRESNELITES* Patented Fresnelens provides soft edge spot and flood light. Ideal for stage lighting. Equipped with spherical reflectors, focusing device, yoke, clamp or base; metal color frame, asbestos lead. Accessories: Tripod base, glass color filters, flanges, etc. available at extra cost.

	Lens Diam.	Wattage		
	6 inch	250-500-750	500	20.00
Cast aluminum top and bottom. Screw feed focusing. Castered stand with 4' to 7' ext. pipe. (Others in steel bodies with slide focusing device.)	8 inch	1000-1500	501	80.00
	10 inch	2000	502	120.00
	14 inch	5000	503	170.00
	6 inch	250-500-750	505S	45.00
	3 inch	75-150	508	15.40

14 3000 W LEKO FOLLOW SPOT* A powerful new precision spotlight to use in place of noisy, clumsy arc lights. Iris, horizontal and vertical shutters. Internal yoke, blower, alzak reflector and 12" diam. lens. Highly efficient and easy to operate. Includes crank operated stand. Alternating or direct current. **1540** **425.00**

15 FRESNELITE JR* 100 watt streamlined baby Fresnelite. Heat resisting 3" fresnelens. Alzak reflector with adjustable focus. Takes Heat resisting glass filters in 14 colors. Supplied with base, 8 foot cord and Hubbel plug. **1211** **13.20**

16 FLOOR POCKETS

Description		
1 way and plug	3091	12.00
2 way and plugs	3092	22.00
3 way and plugs	3093	32.00
4 way and plugs	3094	42.00

ELECTRONIC CONTROL SWITCHBOARDS AVAILABLE

(Lamp bulbs not included in any of the above fixtures)

*PATENTED OR PATENT PENDING

CENTURY LIGHTING, INC.

419 WEST 55 STREET, NEW YORK 19, N. Y. 626 N. ROBERTSON BLVD., LOS ANGELES 46, CALIF.

CENTURY LIGHTING EQUIPMENT IS ENGINEERED LIGHTING EQUIPMENT

VOIGT

Illuminated Drinking Fountains
Exit and Directional Signs

(Include Them in Your Building Plans and Specifications)



No. 101

Beauty Plus 3 Useful Features

COMBINED IN ONE ATTRACTIVE UNIT

- SANITARY DRINKING WATER
- DECORATIVE MIRROR
- MODERN ILLUMINATION

Do you want to create atmosphere and environment that will attract more business?

Don't you think it's good business to provide comfort and satisfaction to please customers and make them come again and again?

Then use Voigt Drinking Fountains. Available with or without electric cooling equipment.

Roughing-in diagrams furnished with all details, measurements, etc., for installation, plumbing and electrical connections.

Select the one you like best . . . Order it now or include it in your building plans and specifications.



No. 100

Good Quality • Attractive • Practical
Low Cost Signs That Meet All Requirements

ILLUMINATED — APPROVED WITH UNDERWRITERS AND UNION LABELS. Wired complete with Fe- socket and all fittings less lamp bulbs. EASY T INSTALL on outlet box. Illustrations approximate 1/12th actual size.



128-LP



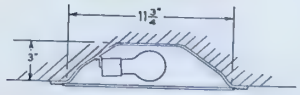
128-X—6" Letters



128-MP



128-L
4" Letters

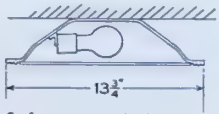


Dimensions of recessed box which fits inside wall 11¾" x 6½" x 3" deep. Size of outside frame which fits flush with wall 13¾" x 8½".



128-M
4" Letters

NEW No. 128 signs are NOW AVAILABLE; immediate delivery from stock. Wall mounted box type adaptable for either recess or surface installation. One piece die stamped box and frame of No. 20 gauge steel, rustproofed, chrome-like plated finish. EASY TO INSTALL.



Surface mounted; box exposed on wall.

Illuminated face panels are 1/16" thick thermo-setting non-shatterable plastic. No. 128-X, L and M panels are opaque black background with white translucent letters. Red white or green lamp bulbs will provide red white or green illuminated EXIT letters as local regulations may require. No. 128-LP and MP panels have black figure silhouette with rose color and blue color backgrounds respectively.

Use the following economical, standard, medium base lamp bulbs to illuminate VOIGT signs. S-11, 7½ Watt; S-14, 10 Watt; A-15, 15 Watt; A-19, 25 Watt.

EDGE-LIGHTED



CEILING SHOWING
8 x 12" Glass
213 Single Face
214 Double Face



EXTENDED WALL SHOWING
4 x 12" Glass
210 Single Face
211 Double Face



FLAT WALL SHOWING
6 x 12" Glass
212 Single Face

Plated Brushed Chrome finish on die stamped lamp housings of No. 20 gauge steel. Rigid, substantial construction. Any lettering sandblasted on ¼" polished plate glass in 4 x 12", 6 x 12", or 8 x 12" sizes. Specify size glass or height of letters.

Spun metal lamp housings in plated chrome-like finish. Sandblasted letters on ¼" Polished Plate glass.



EXTENDED WALL
112-L—1" LADIES
112-M—1" MEN
(Double Face)



FLAT WALL

148-X
6" RED EXIT



EXTENDED WALL
*118LS 2" Ladies' Single Face
118-LD 2" Ladies' Double Face
*118-MS 2" Men Single Face
118-MD 2" Men Double Face
*Specify letters nearest wall—i.e. L or S in Ladies; M or N in Men.



FLAT WALL

148-L—3" LADIES
148-M—3" MEN



CEILING
117-LS 2½" Ladies' Single Face
117-LD 2½" Ladies' Double Face
117-MS 2½" Men Single Face
117-MD 2½" Men Double Face



FLAT WALL
111-L—1" LADIES
111-M—1" MEN

VOIGT COMPANY
ILLUMINATING ENGINEERS
DESIGNERS AND MANUFACTURERS

46th Year

1649 NORTH BROAD STREET
PHILADELPHIA 22, PENNA.
Telephone: STevenson 4-0600

VOIGT *Lighting Equipment*

SEMI-INDIRECT LIGHTING | **INDIRECT LIGHTING**



MODERN DECOR

ALL wall brackets are wired for 2 circuits providing intensities of variable illumination. No. 1 circuit provides bright white or subdued amber light for house lighting; No. 2 circuit, soft, restful color illumination for show lights.

All items have approved Underwriter and Union labels. YOU ARE SAFE AND SURE WITH VOIGT EQUIPMENT.

No. 144 — White Alabaster glass. 4 section illustrated. Made in 1, 2, 3, 4 or more sections; 3 lights in each section. Metal parts finished in gold.

No.	Sections	Size	Lights
144	4	40x12"	12
143	3	31x12"	9
142	2	22x12"	6
141	1	12x12"	3

No. 122-A—Half cylinders of White Alabaster glass. Two sections illustrated. Made in 1, 2, 3 or 4 section in 6, 8, 10 and 12" diameter glass. Metal parts finished in gold.

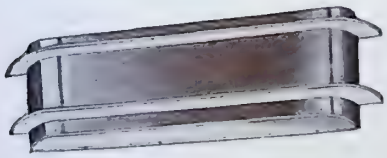
No.	Sections	Size	Lights
121	1	16x6"	3
121-A	1	18x8"	3
121-B	1	20x10"	4
121-C	1	22x12"	5
122	2	38x10"	7
122-A	2	42x12"	9
123	3	54x10"	10
123-A	3	60x12"	12
124	4	74x12"	15

No. 154—All metal for Indirect Lighting. 4 sections illustrated. Made in 1, 2, 3, 4 or more sections, 3 lights in each section. Aluminum finish, gold trim.

No.	Sections	Size	Lights
154	4	37x12"	12
153	3	29x12"	9
152	2	21x12"	6
151	1	14x12"	3

No. 104—Metal louvred vertical fins conceal lamp bulbs yet allow a uniform glow of soft light to filter thru the openings similar to a Venetian blind effect. Ivory finish with gold trim.

No.	Size	Lights
104	26x8"	13
104-A	24x8"	9
104-B	48x8"	17



No. 109

Indirect Wall Bracket with luminous glass edges. Light is reflected up and down. Gold finish metal.

Number	Glass Size	Lights	Circuits
109	26" long	5	2 (3 x 2)
109-A	22" long	4	2 (2 x 2)
109-B	18½" long	3	2 (2 x 1)
109-C	16½" long	2	1



No. 170

24" diameter circle with concentric rings sand-blasted and colored in shaded gold on translucent white alabaster art glass. Decorative, edge-lighted, ¼" polished plate glass fins on each side. Overall spread 48"; 16 lights, 2 circuits, 8 x 8; metal parts finished in gold.

No. 171

24" diameter circle only; less glass fins on each side; otherwise same as No. 170.

VOIGT COMPANY

THEATRE LIGHTING SPECIALISTS

QUALITY PRODUCTS SINCE 1903 — VOIGT COMPANY — PHILADELPHIA, PA.

1649 NORTH BROAD STREET
PHILADELPHIA 22, PENNA.
Telephone: STevenson 4-0600

Don't Worry about . . .

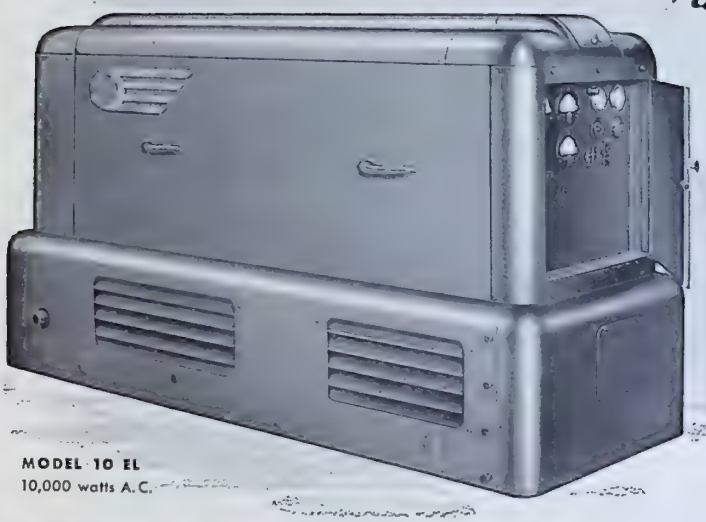
POWER SHORTAGES

Low Voltage

Power Conservation Orders

BROWN-OUTS

DIMOUTS



MODEL 10 EL
10,000 watts A.C.

Avoid Refunds and Shutdowns with ONAN STANDBY ELECTRIC POWER!

You are protected against any power interruption or restriction on your use of electricity with an Onan Standby Plant. In case of power failure the Onan Emergency Electric Plant takes over the entire power load within seconds *automatically* and the show goes on! During periods when power use is curtailed, just switch to your Onan Plant and use all the current you need for normal operation of your theater.

An Onan Electric Plant is low in cost and installation is simple. Ruggedly-built and dependable, they require very little attention or maintenance. Send coupon below for complete information on how you can be protected against any interruption of electrical service.

ONAN STANDBY ELECTRIC PLANTS—1,000 to 35,000 watts A.C., all standard voltages, 50 or 60-cycle. 25-cycle plants available in 3,000 to 25,000-watt capacities. Three-phase for units 3,000 watts or larger.



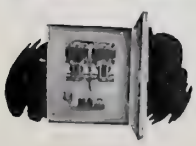
Proved Dependable in Thousands of Installations
Theaters, hospitals, radio stations and other businesses in every part of the country rely on Onan Standby Plants for uninterrupted power.



Provides Power for all Electrical Equipment
With an Onan Standby Plant even the popcorn machine keeps going during an emergency. Power is supplied for projectors, signs, heating and ventilating systems.



Approved by the Pennsylvania State Industrial Board
The rigid requirements for standby systems as outlined in Pennsylvania's Panic Law are met in detail by Onan Standby Plants.



Takes Over the Power Load Within Seconds, Automatically!
When power fails *for any reason*, the Onan Automatic Standby Plant starts itself, runs for the duration of the emergency and stops when commercial power is restored.

Write for **FREE** *Folder*

Contains specifications of Onan Emergency Plants. Helps you choose the right size and type.



D. W. ONAN & SONS INC.
2403 Royalston Ave., Minneapolis 5, Minnesota

Please send me details of Onan Standby Electric Systems for theaters.

Onan PRODUCTS

NAME_____

STREET_____

CITY_____ STATE_____

ONAN STANDBY POWER



"Jeepers... imagine Dad sitting through a double feature!"

Even your fussiest patrons will enjoy the show more . . . *if* the seats in your theater are cushioned with Restfoam.

That means they'll come back more often. For Restfoam has plenty of box-office appeal.

Restfoam has plenty of appeal for theater owners, too. It's your best bet for long service with low maintenance cost. And it makes upholstery fabrics last and last. In fact, it's a *four-star* attraction:

★ **Gives greater comfort!** No lumps! No bumps! Patrons enjoy the firm, *natural* support of Restfoam.

★ **Cool and clean!** Restfoam is self-ventilated by millions of tiny, interlaced air cells. It is 100% pure natural latex foam. And it contains no dust-making materials.

★ **Keeps its shape!** Nothing to shift or slide. Nothing to pack or mat down. No broken wires to pop out. No wonder you get longer and safer service from Restfoam.

★ **Cuts upkeep costs!** Restfoam relieves strain on covering materials. Your fabric stands up better—and longer.

So . . . if *you* want to step attendance up and costs down, find out how Restfoam can help you do it. Specify Restfoam when buying new chairs—for furniture in lobby and rest rooms, too. See your theater architect or supply dealer. Or write for details today.



SEND FOR FREE APPLICATION MANUAL

for reupholstering of theater seats. New Application Manual shows you how easy it is for you to use Restfoam. Profusely illustrated. Send for your copy now! No obligation. Hewitt Restfoam Division, 370 Lexington Ave., New York 17, N.Y., 7 S. Dearborn St., Chicago 3, Ill.

HEWITT RESTFOAM

HEWITT-ROBINS INCORPORATED

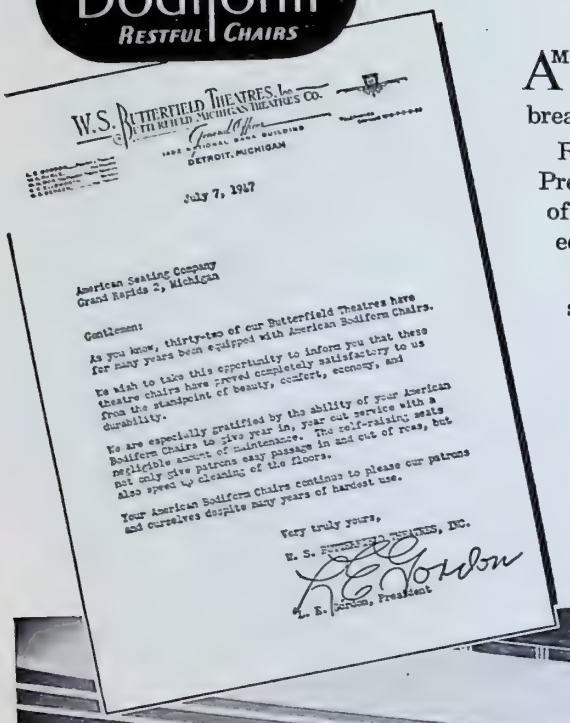
Hewitt Restfoam Division
Buffalo 5, New York



LONG YEARS ON THE JOB

—and still going strong!

AMERICAN Bodiform RESTFUL CHAIRS



W. S. BUTTERFIELD THEATRES, Inc.
BUTTERFIELD MICHIGAN THEATRES CO.
General Offices
1402 NATIONAL BANK BUILDING
DETROIT, MICHIGAN

July 7, 1947

American Seating Company
Grand Rapids 2, Michigan

Gentlemen:

As you know, thirty-two of our Butterfield Theatres have for many years been equipped with American Bodiform Chairs.

We wish to take this opportunity to inform you that these theatre chairs have proved completely satisfactory to us from the standpoint of beauty, comfort, economy, and durability.

We are especially gratified by the ability of your American Bodiform Chairs to give year in, year out service with a negligible amount of maintenance. The self-raising seats not only give patrons easy passage in and out of rows, but also speed up cleaning of the floors.

Your American Bodiform Chairs continue to please our patrons and ourselves despite many years of hardest use.

Very truly yours,

W. S. BUTTERFIELD THEATRES, INC.

L. E. Gordon

L. E. Gordon, President

AMERICAN Bodiform Chairs are proved best by the toughest test—actual service in busy theatres the length and breadth of the nation.

Reproduced here is a letter from Laurence E. Gordon, President of W. S. Butterfield Theatres, Inc. It is typical of the many letters we receive from operators of theatres equipped with American Bodiform Chairs.

Read for yourself the remarkable facts about the money-saving ability of these famous theatre chairs to withstand many years of constant hard use with minimum maintenance in 32 Butterfield theatres.

Now you know why profit-wise theatre operators will settle for nothing less than American Bodiform Chairs. Now you know why—for beauty, comfort, economy, and service—it will pay *you* to hold out for American Bodiform—world's finest and most popular theatre chairs.



State Theater, Ann Arbor, Michigan
Architects: C. Howard Crane & Associates

American Seating Company

GRAND RAPIDS 2, MICHIGAN

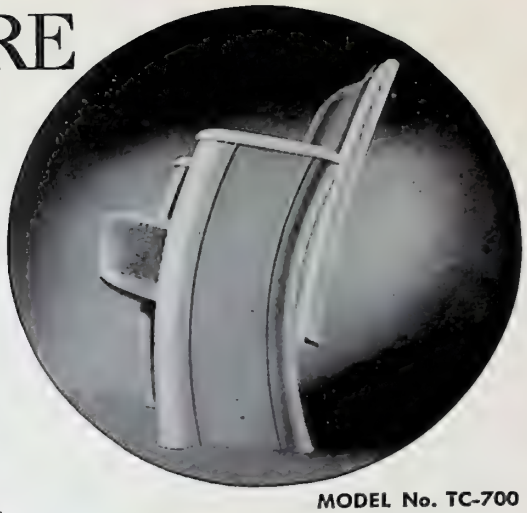
WORLD'S LEADER IN PUBLIC SEATING

Manufacturers of Theatre, Auditorium, School, Church, Transportation and Stadium Seating
Branch Offices and Distributors in Principal Cities

ENCORE



MODEL No. TC-701



MODEL No. TC-700

Smartest Choice of the Year



MODEL No. TC-702

AIRFLO



MODEL No. TC-703

Current models of Heywood-Wakefield Encore and Airflo theatre chairs are illustrated in full color in our new catalogue available upon request.

HEYWOOD-WAKEFIELD COMPANY

Theatre Seating Division

MENOMINEE, MICHIGAN

HEYWOOD-WAKEFIELD

EST. 1826

REG. U. S. PAT. OFF.

IDEAL SLIDE-RACK CHAIRS LAST FOR YEARS!

THEY HAVE TO BE BUILT BETTER,
FOR WHERE THERE ARE IDEAL
CHAIRS, BUSINESS IS INVARIABLY GOOD.



- Provide 100% more passing space
- Eliminate necessity of standing to permit passing
- Six inches of smooth, effortless retraction with no humps, jarring or disturbance to those behind
- Deep spring cushioned comfort
- No sharp edges to bump shins
- No pinching hazards. Full length back panel entirely covers seat cushions

The ONLY chair affording 100% safety in emergencies. Unoccupied seats automatically, silently slide back, rise and lock into position; automatically disengaging when lowered for occupancy.

No understructure to hamper cleaning.

Adjustable to all conditions and inclines. Conventional type seating for balconies with high risers can be supplied on same order.

A choice of models, end standards and upholstering.

Sold by Independent Theatre Supply Dealers

IDEAL SEATING COMPANY OF GRAND RAPIDS

• SEATING IN THE MODERN MANNER •



Push-Back* Seats

Prompt Delivery • Choice of World's Finest Fabrics • Complete Engineering Service • All-Steel Construction • Deep Full-Spring Comfort • Requires Only Ordinary Spacing • Remarkably Low Maintenance Cost • Complete Export Facility.



1—Here's the normal, comfortable lounge-chair position of the Push-Back Theatre Seat.



2—Seated patrons need not stand—a gentle movement of the body slides the seat back.



3—Relax, chair slides back to normal, comfortable position—no standing up, no inconvenience.

From hundreds of leading theatres comes the overwhelming evidence: the original Kroehler PUSH-BACKS offer you real showmanship because they are

. . . attracting patrons through extra comfort and convenience features.

. . . creating word-of-mouth advertising.

. . . building good will.

. . . providing economical and dependable service, month in and month out.

WRITE OR WIRE ONE OF THE KROEHLER PUBLIC SEATING OFFICES LISTED BELOW. DO IT TODAY!

KROEHLER MFG. CO. THEATRE SEATING DIVISION

666 Lake Shore Drive.....Chicago 11, Illinois
2028 South Vermont Avenue.....Los Angeles 7, California
206 Lexington Avenue.....New York 16, New York
2023 Jackson Street.....Dallas, Texas

Canadian Theatre Chair Co., Ltd., 40 St. Patrick Street
Toronto 2B, Canada

John and Drew Eberson, architects, collaborated on these recent Push-Back chair installations.

FAIRLAWN THEATRE, Anacostia, Washington, D. C.
PALACE THEATRE, Suffolk, Va.
LAUREL THEATRE, Laurel, Md.
ELLSTON THEATRE, Ellston, Va.
ATLANTIC THEATRE, Washington, D. C.
CORAL THEATRE, Bradbury Hts., Md.

KROEHLER Push-Back THEATRE SEATS
The World's Finest Theatre Seat

NOW AVAILABLE: KROEHLER CUSHIONIZED FURNITURE TO MODERNIZE YOUR LOBBY**

**Reg. U. S. Pat. Off.

*Fully protected by patents



Morleigh, ML-33

Saratoga, SA-33

Shelbourne, SB-57

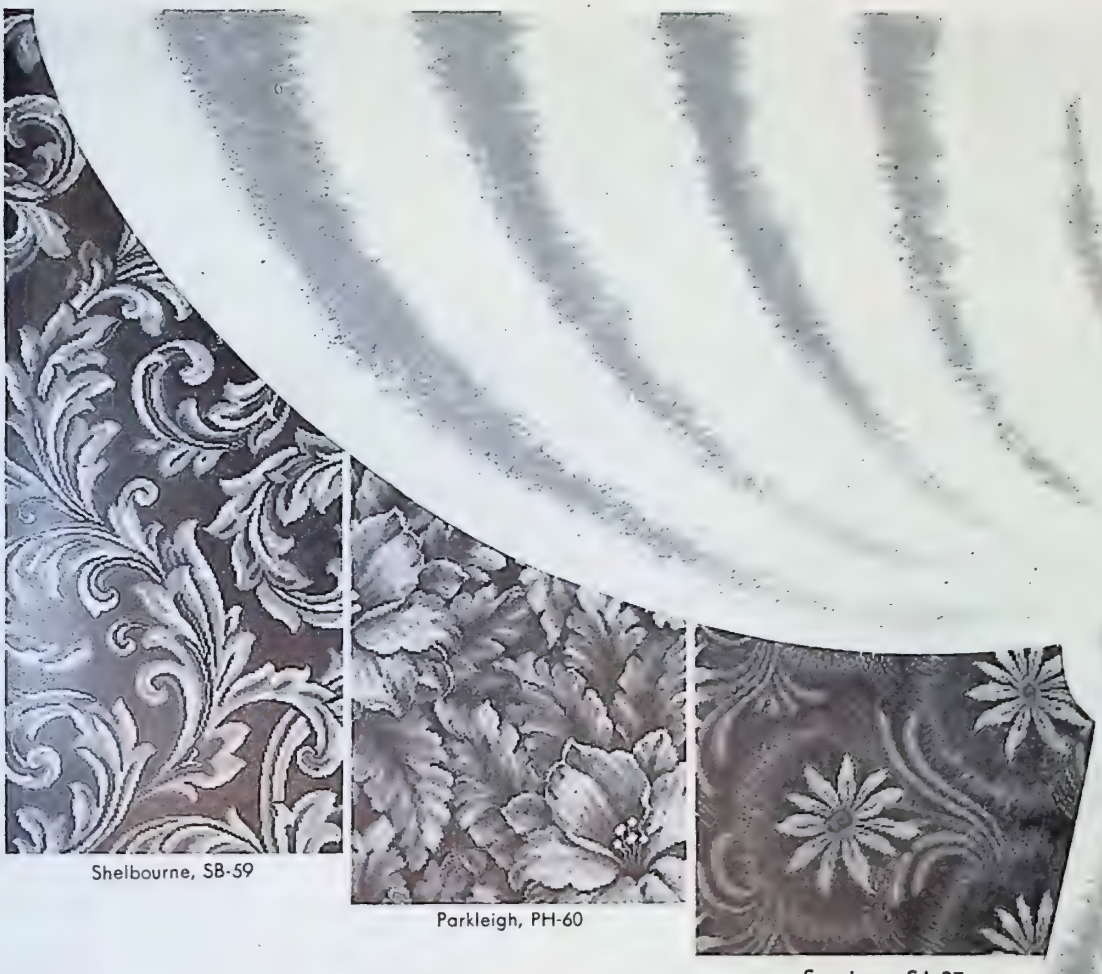
WHEN THE CURTAIN GOES

Mohawk

Mohawk Contract Carpets are specially built from tough resilient imported wools to take hard wear... are specially designed to look handsome in big units under artificial light. You get more wear for your money, you get more beauty for your money, when you specify Mohawk Contract Carpets.

Place Your Order Early With Your Contract Dealer

or wire us for nearest dealer's name



Shelbourne, SB-59

Parkleigh, PH-60

Saratoga, SA-37

UP IN THE BEST THEATRES

Carpet

Mohawk's Five Point Star of Balanced Construction guarantees durability in these ways:

1* Wool Blend
2** Pitch
3*** Rows per Inch
4**** Yarn Size
5***** Pile Height



MOHAWK CARPET MILLS, INC.

295 FIFTH AVENUE, NEW YORK

Have you a theatre Carpet Problem?



John Eberson, of the firm of John and Drew Eberson

Read what John Eberson, of the firm of John and Drew Eberson, and dean of American theatre designers, has to say about theatre carpets in general, and Alexander Smith carpets and service in particular.

"In planning for my carpets for a theatre, I take into consideration that the interior is primarily one which should result in pleasant and stimulating surroundings for its patrons. Surfaces such as foyers and lounges require large patterns in a scale corresponding to these large spaces; while I recommend to owners that they use small-patterned, two-toned carpets in the aisles. Colors require as careful selection as patterns, and the combination produces the essential comfort and attractiveness for a theatre interior.

"Carpets must hold up under the wear and tear they are exposed to from hundreds of theatre-goers. The original cost of a well-made, durable carpet means a saving over the continuous expenses for replacements with less durable goods.

"I have had the best of results from Alexander Smith Carpets. Their Crestwood line has solved many carpet problems for me and has resulted in satisfied clients. Their Contract Department has given me needed assistance in the way of samples and suggestions on colors and patterns."

Copyright 1949, Alexander Smith & Sons Carpet Co.

Consult a Theatre Carpet Specialist...

Why not pass your carpet problem on to an Alexander Smith contractor or sales representative? He is a theatre carpet specialist. He knows what's the best bet in theatre carpets. He will:

1. Advise on methods of installation, avoid waste on yardage, expedite deliveries.
2. Save on upkeep by advising the most economical quality and weave for each specific location.
3. Increase *your* satisfaction by suggesting the design and color which will harmonize best with your theatre's interiors.

Write Alexander Smith Contract Service Department, 295 Fifth Avenue, New York 16, N. Y.

Alexander Smith Crestwood – America's No. 1 Theatre Carpet

Alexander Smith

FLOOR-PLAN RUGS 1845 BROADLOOM CARPETS



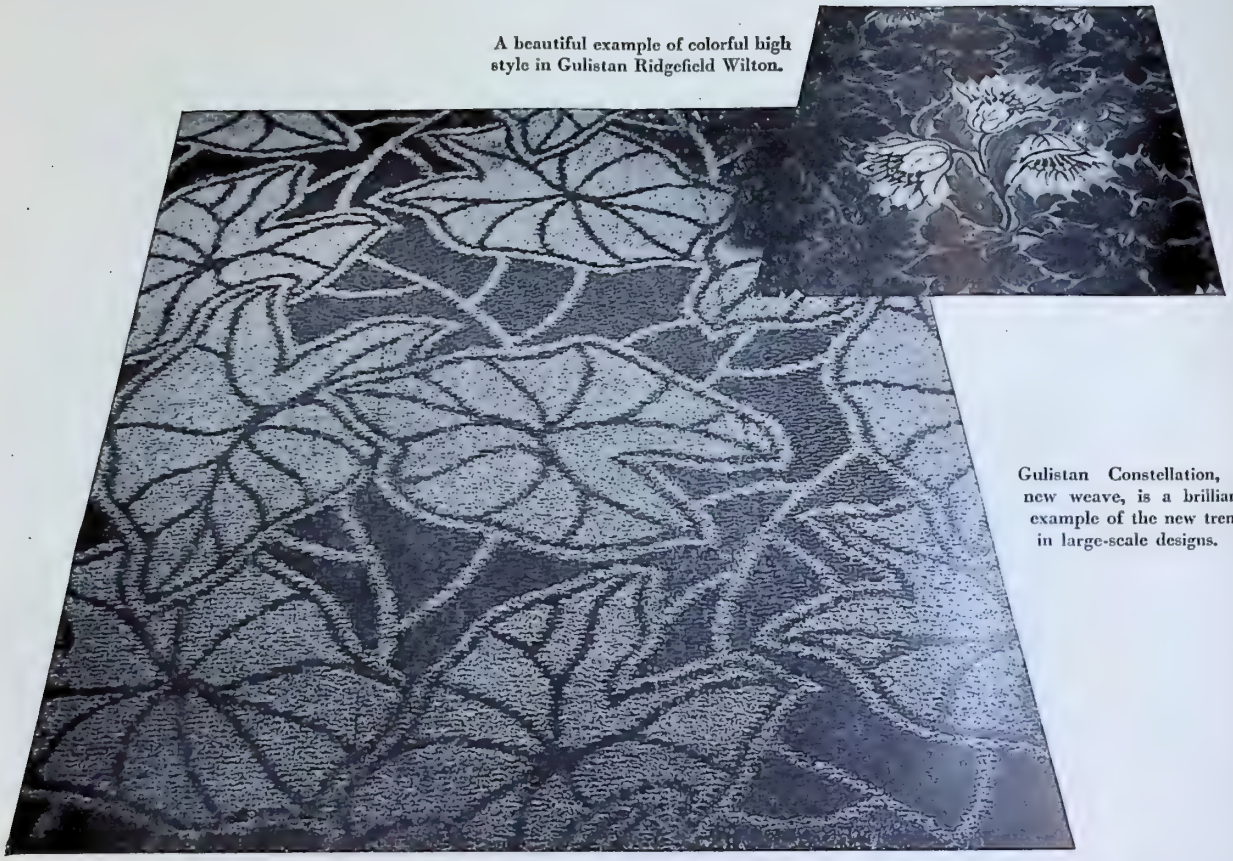
Crestwood pattern No. 2387C

Crestwood pattern No. 2383C

Crestwood pattern No. 2120A

Crestwood pattern No. 2385A

A beautiful example of colorful high style in Gulistan Ridgefield Wilton.



Gulistan Constellation, a new weave, is a brilliant example of the new trend in large-scale designs.

Carpet your theatre in style

WITH LONG-LASTING GULISTAN CARPETS



A distinctive design in Gulistan Ridgefield Wilton combining good taste with glowing color.

Today's alert theatre men know that it is not enough that a carpet wear well . . . it must create among patrons a feeling of luxury and style. Gulistan theatre carpet is used in a large number of the nation's finest and most successful theatres because their owners know that the *best* investment they can make is the *finest* carpet they can afford.

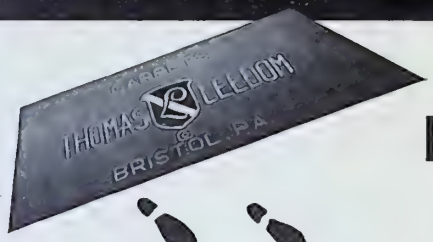
Many beautiful designs, such as those illustrated, will soon be available in greater quantities for your own requirements. Or, you may prefer to have your favorite grade of Gulistan carpet made to order in colors and designs of your own selection.

GULISTAN

Quality Carpet for Leading Theatres since 1905

WOVEN ON POWER LOOMS IN THE U. S. A. BY A. & M. KARAGHEUSIAN, INC., 295 FIFTH AVENUE, NEW YORK 16, N. Y.

LEEDOM



Brings its WELCOME MAT to *Your* Doorstep

As one step in our planned campaign of aids to contractors LEEDOM is following the shows so you can see our carpets in your own territory.

Come and see the LEEDOM Display, with examples of specially designed and stock 3/4 and 4/4 carpets.



Watch for the
LEEDOM DISPLAY
in your
TERRITORY

Permanent LEEDOM Displays at all offices listed.

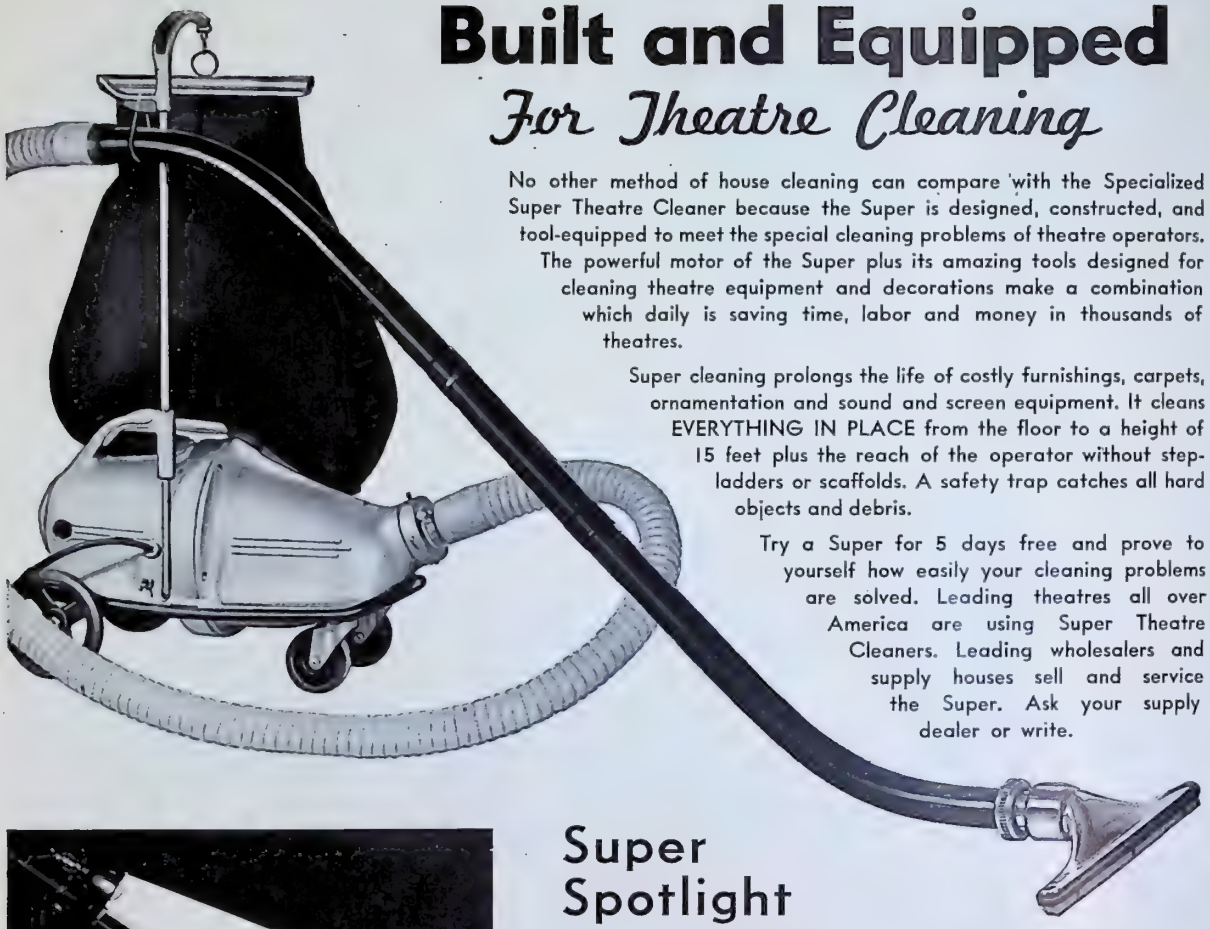
NEW YORK *295 Fifth Avenue* — CHICAGO *1879 Merchandise Mart*

THOMAS L. LEEDOM COMPANY
BRISTOL, PA.

BERVEN CARPETS CORP.
Western Merchandise Mart
SAN FRANCISCO *776 Mission Street* LOS ANGELES *844 South Flower St.*

THEODORE JOHNSON CARPET CO.
2402-14 University Avenue
St. Paul 4, Minnesota

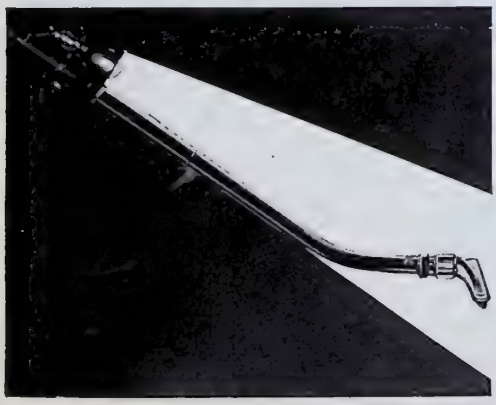
Built and Equipped
For Theatre Cleaning



No other method of house cleaning can compare with the Specialized Super Theatre Cleaner because the Super is designed, constructed, and tool-equipped to meet the special cleaning problems of theatre operators. The powerful motor of the Super plus its amazing tools designed for cleaning theatre equipment and decorations make a combination which daily is saving time, labor and money in thousands of theatres.

Super cleaning prolongs the life of costly furnishings, carpets, ornamentation and sound and screen equipment. It cleans EVERYTHING IN PLACE from the floor to a height of 15 feet plus the reach of the operator without step-ladders or scaffolds. A safety trap catches all hard objects and debris.

Try a Super for 5 days free and prove to yourself how easily your cleaning problems are solved. Leading theatres all over America are using Super Theatre Cleaners. Leading wholesalers and supply houses sell and service the Super. Ask your supply dealer or write.

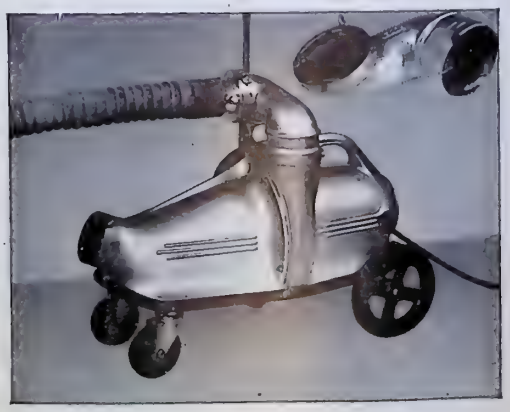


Super Spotlight

The Super Spotlight mounted on the handle of the Super throws a wide beam in front and around the Floor Tool, illuminating dark places with more efficiency than house lights. Cuts electric bills and speeds the job.

Blower Elbow

The Super Blower is an inexpensive accessory, which converts the Super Cleaner to a blower for boosting refuse and debris out of hard-to-reach places. Popcorn boxes, candy wrappers, etc., are easily moved from under seats and down front for easy disposal.



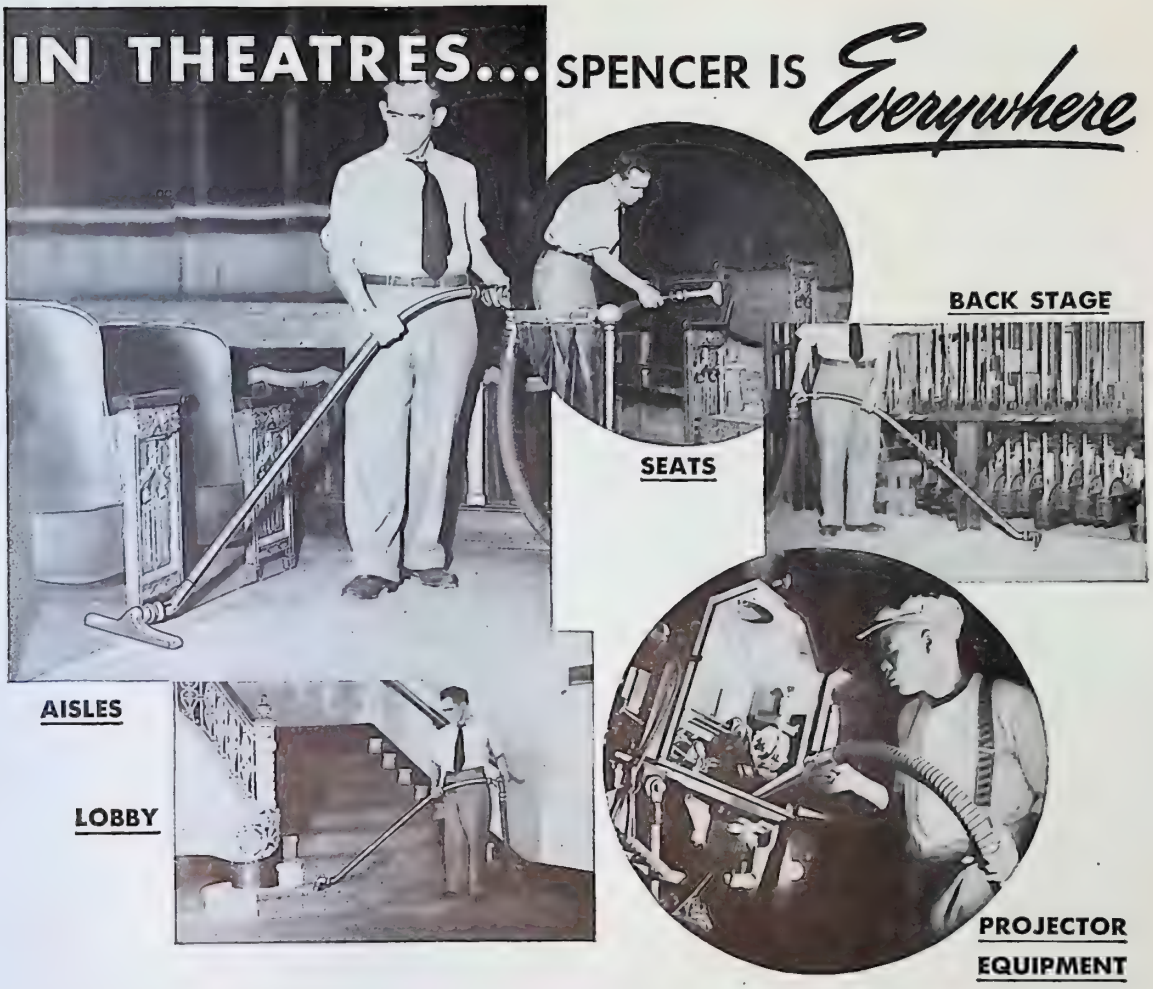


Screen Brush

The Super Screen Brush is made of long, soft hair which cleans the screen and clears sound holes without harming the screen in any way. Frequent cleaning, easy with the Super Screen Brush, prolongs the life of the screen, assures bright, clean pictures and clear sound effects at all times.

NATIONAL SUPER SERVICE COMPANY, INC., 1951 N. 13TH ST., TOLEDO 2, OHIO
NATIONAL SUPER SERVICE CO. OF CANADA, TORONTO, ONT., VANCOUVER, B.C.

IN THEATRES... SPENCER IS *Everywhere*



In every state, in all large cities, Spencer Vacuum Cleaning is helping to keep thousands of theatres at top condition with lowest possible cleaning costs. Expensive rugs last longer when cleaned with sufficient vacuum power. Large areas and bulky debris disappear quickly and seats look like new when easily manipulated tools, properly designed, do the work.

Back stage, the Spencer is indispensable. Expensive drops, lighting and projection equipment, machinery of all kinds, including the boilers, respond to quick strokes of special Spencer tools.

Architects and engineers have specified Spencer for years, primarily because of the effectiveness, simplicity and long life of the equipment. A few of the Eberson Theatres that use Spencer are shown at the right.

Spencer Vacuum is available for any theatre, large or small. Portable machines ranging from ⅓ to 1½ horsepower and stationary systems from 3 H.P. up are available, all provided with exactly the same hose and tools.

Ask for a list of Spencer-Cleaned Theatres in your vicinity.

EBERSON THEATRES

Spencer-Cleaned

Loews State
Louisville, Ky.
Avalon Theatre
Chicago, Illinois
Paradise Theatre
Chicago, Illinois
Loews Paradise
Bronx, N. Y. C.
R.K.O. Grand
Cincinnati, Ohio
Paramount Theatre
Omaha, Nebraska
Riviera Annex Theatre
Detroit, Michigan

SPENCER HARTFORD **VACUUM CLEANING**

THE SPENCER TURBINE COMPANY · HARTFORD 6, CONNECTICUT

THE THEATRE WASHROOM . . .

a Center of Traffic

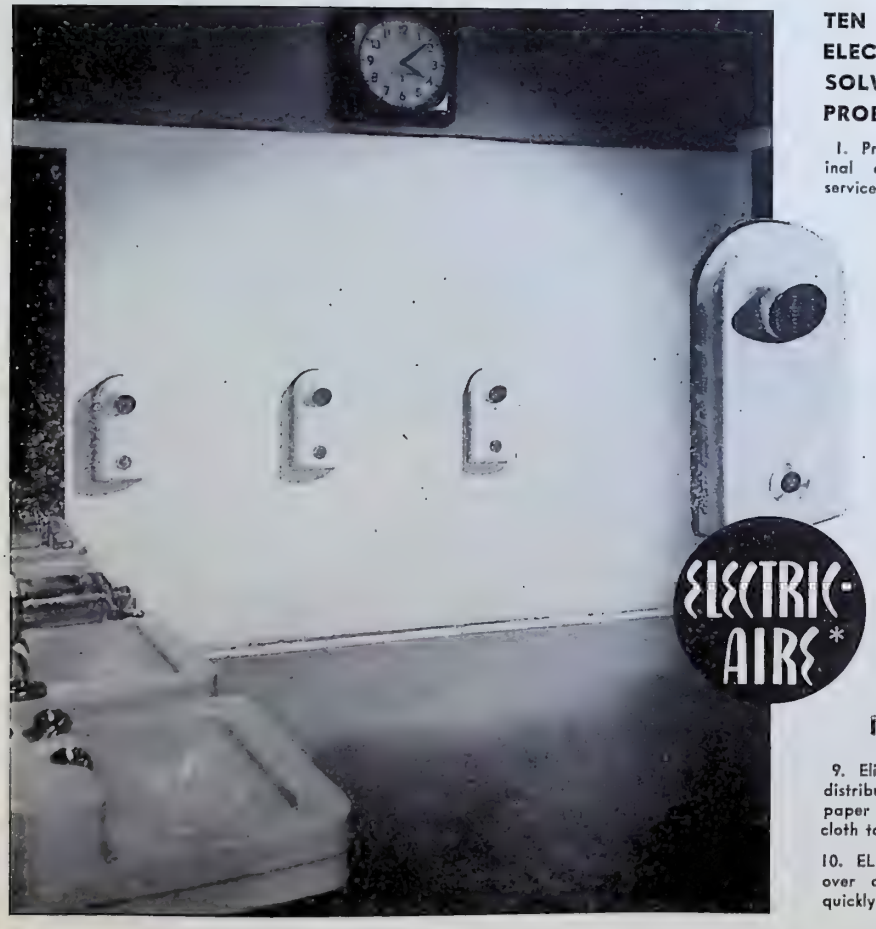
CAN BE

a Center of Attraction

THRU INSTALLING

ELECTRIC-AIRE Quiet, Quick-Drying EVAPO Hand Dryers

Electric-Aire serviced washrooms are AUTOMATICALLY attractive and clean—Attractive because this newly designed unit has style and eye appeal. Automatically clean because there can be no offensive litter of towels or unattractive soiled towel containers.



TEN OTHER REASONS WHY ELECTRIC-AIRE COMPLETELY SOLVES THE WASHROOM PROBLEM:

1. Preserves architect's and owner's original conception of attractive, modern, serviceable washroom.

2. Eliminates marring of tile and marble in mounting towel cabinets; also scratching of walls through careless handling of soiled towel containers.

3. Eliminates Dangerous Fire Hazard in accumulation of soiled paper towels.

4. A continuous, automatic drying service without attention of maid or janitor.

5. Removes the chief cause of clogged toilet bowls—paper towels.

6. Insures a continuous, enduring, efficient service. Paper shortage can never interrupt your drying service.

7. ELECTRIC-AIRE offers thorough drying which prevents chapped and roughened hands.

8. A sanitary service—No soiled "end of towel" hanging from empty cabinet to detract from appearance of washroom or spread disease from one user to another.

9. Eliminates constant buying, storing, distributing, collecting and disposing of paper towels, or servicing and rental on cloth towels—and monthly accounting costs.

10. ELECTRIC-AIRE save from 90 to 95% over any other type of drying service, quickly amortizing its original cost.

ELECTRIC-AIRE ENGINEERING CORP.

209 W. JACKSON BOULEVARD — CHICAGO 6, ILLINOIS

Manufacturers and Distributors of Quality Hand and Hair Evapo-Dryers

*Reg. U. S. Pat. Off.



ONE OUT OF EVERY TEN

AMERICANS IS

HARD OF HEARING

THIS VAST AUDIENCE IS YOURS

with the Acousticon Theatrephone

Almost 20 million potential movie-goers. But because their handicap prevents them from enjoying motion pictures to the fullest, they often stay away from the theatre — and influence friends and relatives to do the same!

With the Acousticon Theatrephone System in your Picture house, you *attract* these people —add a tremendous *new* audience—a steady and grateful audience. For this amazing aid to hearing permits the deafened to hear every sound clearly and distinctly! Enables them to enjoy the movies once again! Gives them the one big reason that they needed to come to *your* theatre —to come regularly and faithfully and bring their friends and family with them!

The Acousticon Theatrephone System can be installed easily and inexpensively. And besides boosting attendance, it gives your theatre priceless good will and publicity. For there's big news in helping the hard-of-hearing, and local papers gladly carry appropriate press releases. So today, now—write for full details on this wonderful way to zoom *your* box-office receipts! It's new revenue — constant revenue for *your* business.

Acousticon

Group equipment for schools, theatres, and auditoriums

DIVISION OF DICTOGRAPH PRODUCTS, INC. • 580 FIFTH AVE., NEW YORK, N. Y.

BACK ISSUES



. . . for those ***EXECUTIVES*** *who want a complete set of cumulatively indexed volumes for easy reference in their office bookcase . . .*

THERE ARE A FEW COPIES OF ASSORTED EDITIONS

ALL CURRENT OR BACK ISSUES ARE THE SAME $3.00 IN THE U.S.A. ($5.00 Elsewhere)

HANDY ORDER FORM

JAY EMANUEL PUBLICATIONS, INC., 1225 VINE STREET, PHILADELPHIA 7, PENNA., U.S.A.

I am interested in obtaining a copy of the following issues. If available please send invoice:

.....EDITION;.....EDITION;.....EDITION

Name_____ Occupation_____

Shipping Address_____

In ordering Back Issues . . . do not send remittance until receipt of bill indicates our ability to make delivery!

PROJECTION *and* SOUND

1948-49

Light Generation by the High-Intensity Carbon Arc

Theoretical Considerations Assembled in the Course of Arc-Carbon Research and Development

F. T. Bowditch
Research Laboratories, National Carbon Company, Inc., Cleveland, Ohio

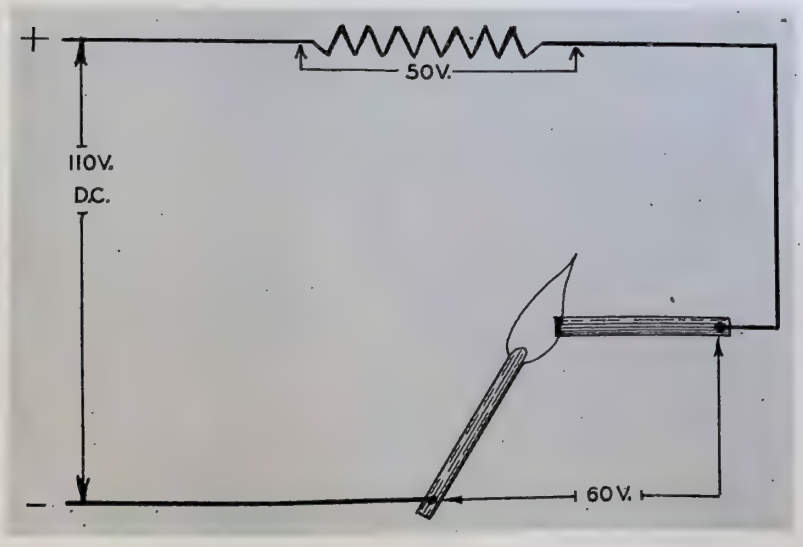
Summary.— The theory of light production in the high-intensity carbon arc is discussed, together with a description of the phenomena associated with the initial striking of the arc and the maintenance of the electric discharge through the arc stream. The formation of the positive carbon crater is described and the factors defined which determine the maximum current loading which a particular carbon electrode will support. The importance of efficient heat dissipation from the positive crater region in extending the useful current range of a given-sized carbon is pointed out, and the effectiveness of water cooling in providing better heat dissipation at this point is noted.

In the motion picture industry, light is perhaps the most important single factor in the recording and reproducing processes involved. Light is thrown in carefully controlled quantities and distribution patterns on the motion picture sets and on the actors. Reflected portions of this incident energy are directed toward a camera lens, and focused to produce a permanent record of this reflected pattern on film. Finally, light is selectively absorbed by prints from this film in a theatre, so that the distribution pattern reaching the original film in the studio camera may be recreated on the theatre screen. Light is also an essential agent in the recording and reproduction of sound, although that important phase of the industry will not be included in this present consideration.

The high-intensity carbon arc is such a commonplace and generally useful light source in the photographic and projection processes which characterize the motion picture industry[1, 2] that little thought ordinarily is given to the physical processes involved in the operation of such a source. In the belief that concepts found useful in the laboratory in directing the development of new and brighter carbons may be of interest to the ultimate users of such carbons, the present discussion has been prepared.

To begin with, consider the simple arc circuit of Fig. 1. Here a direct-current source of perhaps 110 volts is connected through a series resistor to a pair of carbons. In common with all gaseous discharges, the carbon arc has a negative resistance coefficient: as the current is increased, the ohmic resistance of the arc becomes less. Some ballast effect, such as is provided by the series resistor in this case, must, therefore, be incorporated in the circuit. To start the arc, the two carbon electrodes are brought into brief contact, drawn apart again, and a light source of very high intensity is produced where nothing but air existed before.

FIG. 1. A typical carbon-arc circuit.



When the power is first applied, nothing happens, because the circuit includes an air gap between the carbon electrodes which cannot be broken down by the relatively low voltage of the power source. It is not until the electrodes are brought into physical contact that current starts to flow. In a series circuit such as is established when the electrodes touch, the same current flows throughout, so that the relative heat in any portion of the circuit is determined by the resistance of that portion. At the point of contact between the electrodes, the cross-sectional area is small, so that the resistance is high. As a result, a high concentration of heat is produced at this point; and as the pressure on the electrodes is reduced, preparatory to separating them, the contact area grows smaller and smaller, so that it continues to become hotter and hotter.

In order to explain what happens next, it is necessary to consider an atomic property of hot bodies called thermionic emission. The atoms in any solid substance are in a continual state of vibration, with electrons revolving rapidly around each nucleus in a variety of orbits at various distances. When the substance is heated, the atomic vibrations grow more intense, and the electrons spin faster and faster through wider and wider orbits. In the case of those atoms next the surface, an occasional electron will break away altogether, and as the heating continues more and more electrons fly off into space.

Hot carbon is not so good an emitter of electrons as the materials used for this purpose in vacuum tubes, but it does possess this property to an appreciable degree. Thus, to return to the arc, as the last pair of atoms is about to be drawn apart in the separation of the electrodes, the concentration of current and the intensity of the resultant heat are terrific, sufficient not only to cause thermionic emission, but to vaporize the carbon itself at the tiny area of final contact. Consider also what would happen at the instant of separation if no arc were to form, so that the current would fall abruptly to zero. The full open-circuit line voltage would immediately appear across the gap, and if the initial gap is assumed to be a millionth of an inch, and the line voltage 100 volts, a voltage gradient of 100,000,000 volts per inch would be established promptly. As a matter of fact, the distance between atoms in solid carbon is something of the order of 20 billionths

Reprint of a paper presented April 22, 1947, at the Society of Motion Picture Engineers Convention in Chicago and published in the Journal of the S. M. P. E., September, 1947.

of an inch, and it might be assumed that at the instant contact is broken, the physical separation is of this magnitude, which would give a voltage gradient of five billion volts per inch.

It naturally follows that such a tremendous voltage gradient, acting in combination with the free electrons around the white-hot electrode tips, causes enough of them to flow across the gap as the carbons are pulled apart so that current continues to flow through the hot gases, and an arc is established. In turn, the high concentration of power within the narrow confines of the arc produces light, after the following fashion:

To begin with, there is incandescent carbon at its volatilization temperature of over 6500 F (3600 C). Since a temperature of only 2600-2900 F (1425-1595 C) is enough to produce a "white heat", it is apparent that incandescent carbon alone is responsible for a good share of the brightness of the carbon-arc crater; for all of it, as a matter of fact, in the low-intensity carbon arc, and from a fifth to a half of the total brightness in common high-intensity trims.[3]

The increased brightness of the high-intensity arc is the result of the combination of a high current density, i. e., a high concentration of electrons in the arc stream, and an atmosphere in the positive crater region rich in "flame materials" volatilized from the special coring of the positive electrode. These flame materials are in most cases compounds of the cerium group of rare-earth metals, combined in a mixture with carbon in the core. As the carbon shell burns away to form a crater, as indicated by Fig. 2, the core is exposed to the extreme arc temperature and is vaporized into the crater enclosure. Here, the rare-earth particles are bombarded by electrons to produce very intense light. It is perhaps helpful here to picture a maelstrom in the positive crater, with many billions of rare-earth atoms continually colliding with as many electrons. As the result of each collision, a rare-earth atom absorbs energy from an electron, and is transformed into an "excited" state. In other words, the excited atom possesses an amount of energy in excess of the normal stable value. Moreover, as defined by quantum theory, this excess energy may have any one of a number of discrete values, depending upon the number and arrangement of the electrons circulating around the atomic nucleus. The rare-earth atoms have many electrons (cerium has 58, circulating in 14 different orbits) so that the likelihood of scoring a hit on such a large, well-populated target is correspondingly increased. At the same time, there are a great many excited states possible, so that the likelihood is excellent that a hit will produce excitation. Since the rare-earth atoms are not stable in these excited states, they immediately give up their excess energy. This they do in the form of pulses of radiation, each having a particular wavelength associated with the excited state; or an excited atom may return to a normal energy level in a series of discrete steps, emitting radiant-energy pulses of as many different wavelengths on the way. It is characteristic of the rare-earth atoms that these energy pulses are of wavelengths to which the human eye is sensitive, and that they are distributed in such great numbers over the range of visual sensitivity that an essentially equal energy spectrum or a "white" light is produced. In this way, the brightness of the high-intensity carbon-arc crater is increased manyfold over that of the plain carbon arc (to over ten times, in the laboratory).

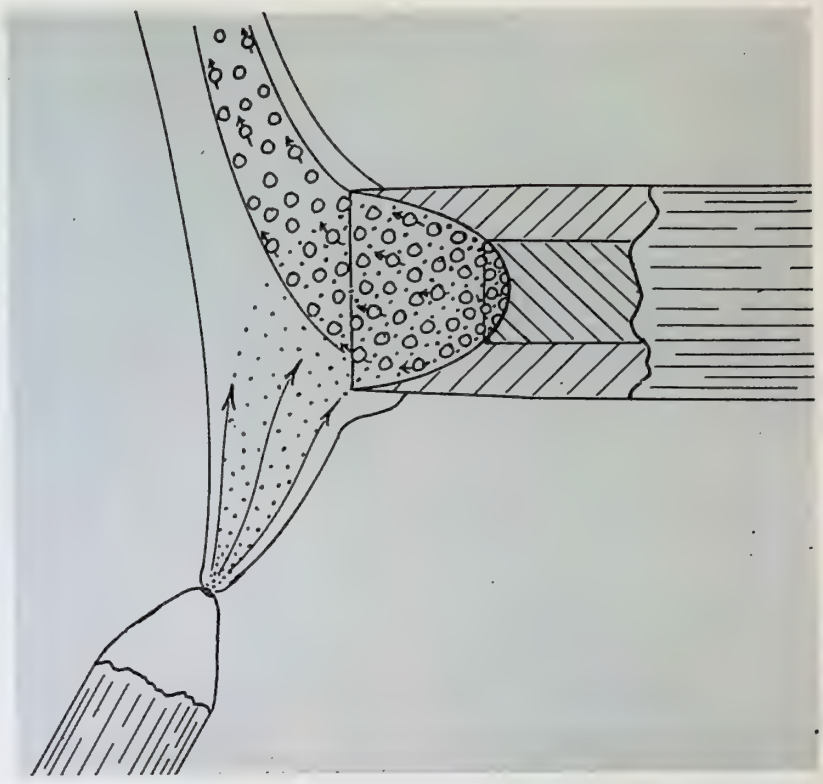


FIG. 2. Diagram showing the mixture of rare-earth atoms and electrons in the positive crater of the high-intensity carbon arc.

Fig. 3, which shows a picture of a typical high-intensity carbon arc, can now be viewed with a new understanding of what is going on. From the incandescent tip of the negative carbon underneath, countless numbers of electrons are being drawn out into the arc stream and accelerated like bullets toward the positive electrode by the voltage gradient along the arc stream. To make enough electrons available, i. e., 63, followed by 17 zeros, electrons per second for each ampere, the negative tip must be heated to a very high temperature, hence the bright tip and red heat-back of this electrode. These electrons rush across the arc stream, meeting nothing much except air atoms until they approach the region of the positive carbon, a bluish light resulting from collisions with the air atoms in the arc stream. At the crater, and particularly inside it, the electron stream encounters the rare-earth atoms, with a resultant production of brilliant white light. Under the influence of convection currents established by the hot gases, a bright stream of excited rare-earth atoms emerges from the crater and drifts upward into the tail flame.

FIG. 3. The inclined trim high-intensity carbon arc. (13.6-mm positive carbon at 150 amperes with the negative directed upward at an angle of 53 degrees from the horizontal.)



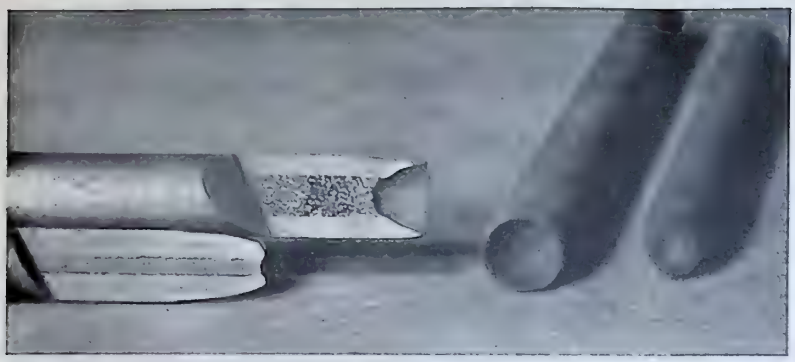


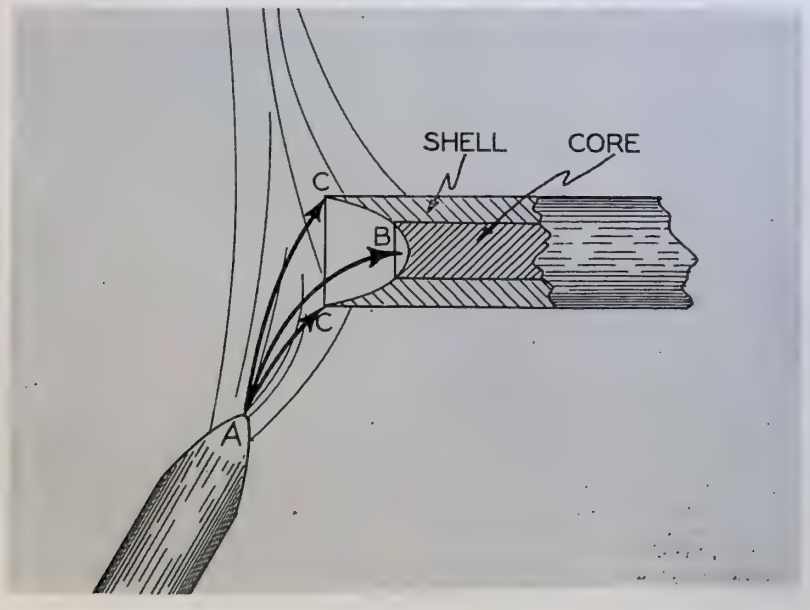
FIG. 4. Comparison of the core sizes and craters of typical low- and high-intensity carbon arcs. (The deep high-intensity crater shown in the upper cross section was formed on a 13.6-mm carbon at 150 amperes, the almost flat low-intensity crater on a 12-mm carbon at 30 amperes.)

Carbon is an ideal material from which to construct the electrodes for such an arc because of three important properties: (a) it is a good electrical conductor, (b) it remains in solid form to a very high temperature (approximately 6500 F (3600 C)), and (c) it volatilizes directly without passing through a messy molten state.[4]

The positive electrode of the high-intensity carbon arc differs from that employed with the low-intensity arc in two important respects. The core is not only much larger, but it is also heavily loaded with the flame materials whose light-producing function has just been described. In low-intensity positive carbons, the core hole is no more than one fourth the diameter of the shell: in the high-intensity positive carbon, the core is at least one half and is frequently a much greater proportion of the outside diameter of the shell. This is illustrated by Fig. 4. The current density is also much higher, a one-half inch low-intensity carbon operating at about 35 amperes as compared with well over 100 amperes for the same-sized high-intensity positive carbon.

Because of the lower voltage drop from the arc stream to the core as compared with the voltage drop to the carbon shell, most of the electrons forming the high current in the arc stream are encouraged to travel to the central core. Here the concentration of energy is so great that the core and the immediately surrrounding shell are vaporized faster than the shell at the outside. Thus, as shown by Fig. 4, a cup or crater is formed on the end of the positive carbon, which is filled with the rich light-producing mixture of rare-earth vapors and electrons. As the current is increased, the depth of this crater likewise increases to a limiting value determined by what is called the "overload" of the carbon. Overload is characterized by the fact that beyond a particular current value the arc no longer burns smoothly and quietly, but becomes unsteady and noisy. Since, for all important uses, the arc must be both stable and quiet, operation is always confined to currents well below this overload value.

FIG. 5. Diagram illustrating the mechanism of overload in a high-intensity carbon arc. AB=Normal electron path to core. AC=overload electron path to carbon shell.



As shown in Fig. 5, the mechanism of overload is visualized as follows. Since the electrons encounter a much lower voltage drop in entering the positive carbon through the central core, the resulting crater becomes deeper and deeper with increasing current. At the same time, the tendency for electrons to flow directly to the shell C at the mouth of the crater, instead of taking the longer path to the bottom B, becomes greater and greater. Finally, the difference between the voltage drop over the longer arc stream AB to the bottom of the crater, and the voltage drop along the shorter path AC to the crater lip, becomes sufficient to counteract the effect of the more favorable electron entrance into the core. When this happens, the electrons travel in increasing numbers to the shell. Here the rate of energy release increases to a point where carbon is volatilized violently and noisily. Thus, an upper limit of about 35 volts (the anode drop to pure carbon) seems to be imposed on the voltage component of the energy which can be released within the positive crater. The current component of this energy is less rigidly limited. For instance, water-cooled positive jaws may be employed, with a minimum protrusion of the positive carbon beyond these jaws.[5] The more efficient heat dissipation thus obtained permits the use of substantially higher currents and the achievement of correspondingly higher brilliancies. The added complication of arc operation with water-cooled jaws has so far prohibited their use in many applications. However, in motion picture studios where background projection is frequently employed to provide the setting for a physically distant location, operation with water-cooled jaws to achieve the brightest possible background image is receiving active experimental consideration.

It is hoped that these theoretical considerations, assembled in the course of arc-carbon research and development, have proved of interest outside that limited field. Not only the designers and the operators of the many types of burning mechanisms which facilitate the generation and release of this benign form of atomic energy, but also the many artisans engaged in the control of this energy to create wanted effects on film and on the motion picture screen, are all dependent upon the radiant output of the carbon arc. It is to them that this paper has been directed.

REFERENCES

[1]Kalb, W. C., "Progress in Projection Lighting," J. Soc. Mot. Pict. Eng., 35, 1 (July 1940), p. 17.

[2]Linderman, R. G., Handley, C. W., and Rodgers, A., "Illumination in Motion Picture Production," J. Soc. Mot. Pict., 40, 6 (June 1943) p. 333.

[3]MacPherson, H. G., "A Suggested Clarification of Carbon Arc Terminology as Applied to Motion Picture Industry," J. Soc. Mot. Pict. Eng., 37, 5 (Nov. 1941), p. 480.

[4]Chaney, N. K., Hamister, V. C., and Glass, S. W., "Properties of Carbon at the Arc Temperature," Trans. Amer. Electrochem. Soc., 67, (1935), p. 201.

[5]Jones, M. T., Zavesky, R. J., and Lozier, W. W., "A New Carbon for Increased Light in Studio and Theatre Projection," J. Soc. Mot. Pict. Eng., 45, 6 (Dec. 1945), p. 449.

High-Intensity Projection Arc Lamp

Supply Source for the Great Amount of Distributed Light Needed at Larger Theatre and Drive-In Screens

By CHARLES A. HAHN
J. E. McAuley Manufacturing Co., Chicago 6, Illinois

Summary—This paper describes mechanics and design of the Peerless Hy-Candescent 120- to 170-ampere projection arc lamp, the Hy-Speed condenser-lens system, and the light heat filter unit.*

Probably because of the extremely limited sales field which has made it impossible to manufacture high-current, condenser-type high-intensity projection arc lamps on the same production basis as other types of projection arc lamps, very little, if any, development work was done prior to the introduction of the Peerless Hy-Candescent lamp.

The sales field for this type of projection arc lamp has recently been broadened by the extreme projection requirements of the automobile drive-in theatre which has become popular during the past several years. Before their advent, however, only the largest theatres, at home and abroad, found that the good light distribution, high light output, and higher operating cost of the condenser-type high-intensity arc justified continuance of their use.

To supply these users with an arc lamp of modern design, engineered to meet the operational problems that develop from the intense heat or currents up to and above 170 amperes the Peerless Hy-Candescent lamp in combination with the Hy-Speed f/2 condenser-lens system offers them a means for obtaining a level of screen illumination impossible with projection arcs employing reflectors and the commercially available copper-coated carbon combinations.

Experience with high-current projection arc lamps has disclosed that high internal lamphouse temperature was the greatest contributor to troublesome operation of the mechanics of the burner and hence was one of the prime problems to consider (Fig. 1).

Mindful of the general trend toward burning higher and higher arc currents and to provide a sufficiently large lamphouse to handle the high heat generated by these arcs, this lamphousing measures 49 inches long, 29 inches high, and 22 inches wide and has a cubical content of approximately 9 feet.

Lamphouse Ventilation

An 8-inch diameter chimney base, instead of the customary 6-inch, is provided to assure sufficient cubic-foot-per-minute exhaust of the heated air and gases from the lamphouse at a velocity that will not disturb the burning arc.

Built inside the lamphouse top and located directly over the arc, is a conical metal canopy measuring 16 × 16 inches at the bottom, the top of which is connected directly to the 8-inch chimney opening at the top of the lamphouse. This canopy is entirely separate from the lamphouse and it has no pockets or corners, hence it can efficiently conduct the arc heat and gases directly out of the lamphouse and prevent them from circulating around the interior of the lamphouse.

To ensure egress for the heated air in the rear upper portion of the lamphouse, outside of the canopy, separate vents are provided in the casting that forms the chimney base so it may exhaust into the projection room.

Normal air intake is provided for by an extremely large opening in the bottom of the rear cover door and through the light cone at the front and, in addition, by a blower connected to the arc-feed motor which alone delivers over 60 cubic feet per minute of air, distributing it over the entire base of the arc-burner mechanism (Fig. 2).

Lamphouse Construction

The lamphouse body is comprised of a formed sheet-steel base of heavy gauge to which are attached the two side frame castings that form the frames for the two side doors as well as the support for the sheet-metal top. These side frames are fastened to the base and likewise to the front and rear castings at points that have machined surfaces, resulting in a final assembly that is extremely rigid.

Both the right and left side doors are 1½ inches in thickness, they are double-walled, hinged at the top, and on their inside walls are each provided with a slidably mounted steel heat baffle plate, opposite the arc. These baffle plates are removable and present three thicknesses of metal with two air spaces to heat-insulate effectively the outside surfaces of the doors from the high arc temperature.

Because of the generous size of the side doors and the fact that the rear cover door is "slip-hinge" mounted, the means for complete accessibility to the burner mechanism are provided (Fig. 2).

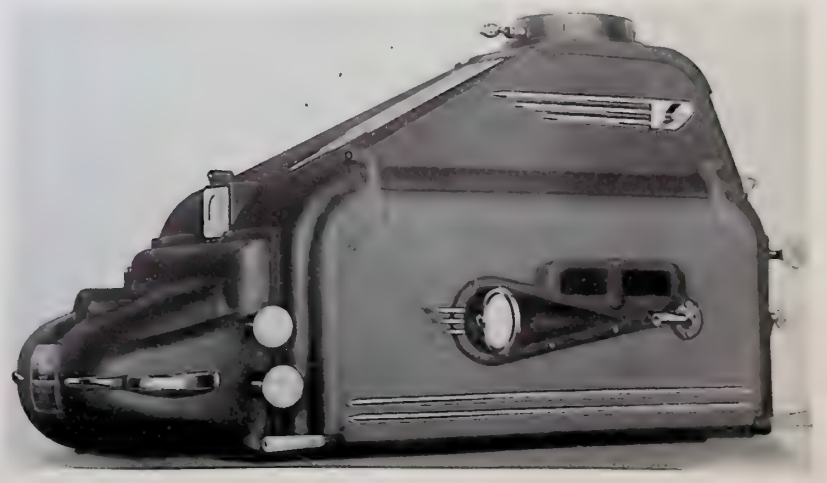
Condenser-Lens Mounting

Slidably mounted to the lamphouse front casting is a second casting which functions as the light cone and the support for the condenser-lens mount. It is machined for accuracy and is made manually adjustable up, down, and sideways by conveniently located control knobs.

As the condenser-lens holder, when placed in its support cradle, is carried with this casting it can readily be seen that these adjustments provide a perfect means of aligning the condenser lenses to the optical axis of the projector, independent of the position of the lamphousing proper, as was shown in Fig. 2.

The condenser support cradle is also slidably mounted to this casting and means are provided thereon for focusing the condensers to the arc crater. The rear dowser, because it is supported by the cradle casting, moves to or away

FIG. 1—Hy-Candescent lamp from rear and right-hand side.



*Reprint of a paper presented October 22, 1947, at the Society of Motion Picture Engineers Convention in New York and published in the Journal of the S. M. P. E., May, 1948.

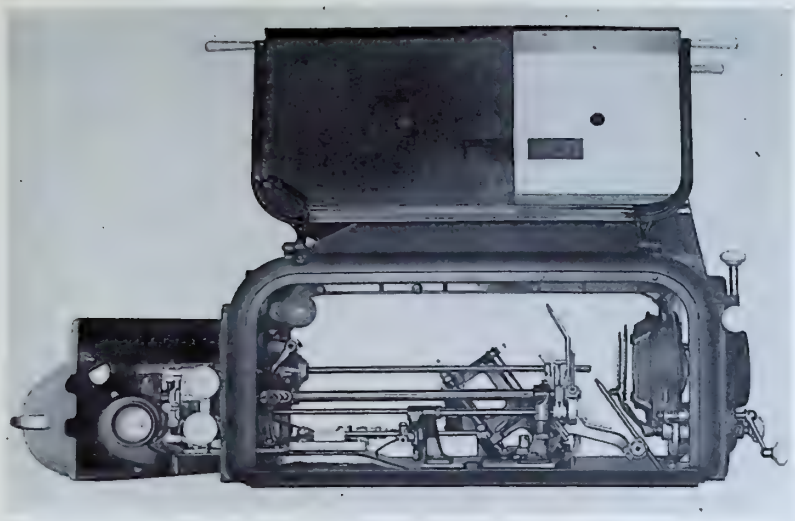


FIG. 2—Right-hand side of lamp showing carbon feeding and burner mechanisms.

from the arc according to condenser-focusing requirement.

The rear dowser is pivoted below and to the left of the optical center, hence it swings upward and to the left of the condenser when it is open and is completely out of the path of the arc tail flames (Fig. 2).

Condenser-Lens Holder

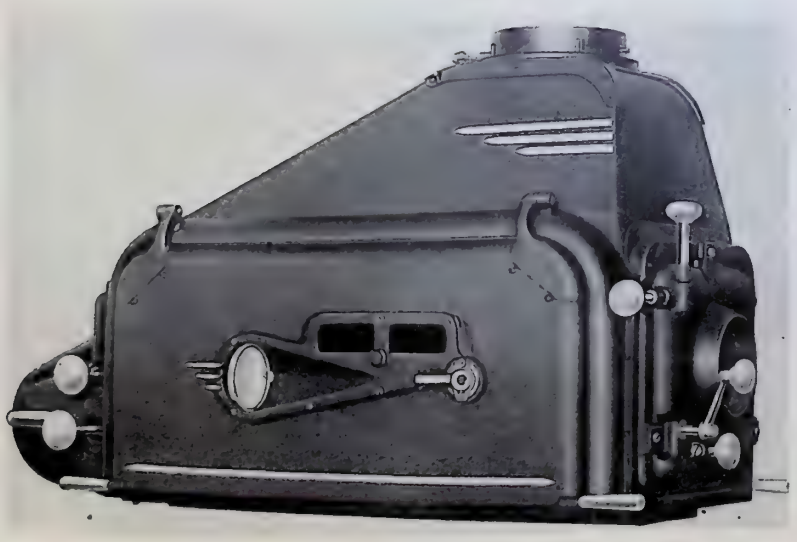
A totally new and highly efficient method of lens mounting is accomplished by providing the condenser-mount casting with several narrow machined prongs into which the rear lens fits. Contact with the rear lens is only at these points. Accurate spacing of the condensers is had by a spun sheet-metal separator ring having several thin sheet-steel radial webs that contact the curved surface of the rear and front lenses. Hence variation in the thickness of the edges of the lenses will cause no change in the correct spacing of their facing curved surfaces. Both lenses with their separator are retained in the main holder casting by a threaded ring at the front of the holder, which likewise is provided with prongs to hold the lenses and spacer assembly in place and in alignment. Thus means are provided to use the full aperture of both condensing lenses (Fig. 4).

Lamphouse Side Doors

The right side of the lamphouse door has two arc-viewing ports, the front one for direct viewing of the arc and the rear one, which is provided with a lighter colored glass, may be used to view the operation of the burner mechanism and to determine carbon length, and so on. The glasses are held in their frames by springs and hence are easily replaceable. An arc-image projector is also built onto the outside of the right side door. It includes a ground-glass screen upon which is projected an image of the burning arc. This screen is recessed into the door and the image is visible to the projectionist from the rear as well as the front of the lamphouse. The angle of the screen may be altered to a vertical plane, notwithstanding the angle at which the projector and lamphouse may be inclined.

The left side of the lamphouse door is provided with only one viewing port having a dark glass for viewing the arc when it is lighted.

FIG. 3—Lamp from front and right-hand side.



Burner

The arc-burner mechanism, including the carbon-feeding mechanism, blower unit, and motor, are built as a complete unit and held in position inside of the lamphouse by only one screw at the rear and a threaded stud at the front end. It is completely removable with a minimum of effort (Fig. 6).

The carbon-feed mechanism (Fig. 7) attaches to the burner-base casting at the rear end. The feed-mechanism main frame also provides the mounting for the blower unit and feed motor. As before stated, a positive supply of air is directed into the lamphouse via the channeled burner base which is utilized as an air duct and air distributor.

To provide a wide latitude of carbon-feed speeds for each carbon, infinitely variable hardened and ground overriding clutches are provided. This arrangement allows the use of a constant-speed motor, hence the motor operates at its maximum torque at all times and eliminates the need of a controlling rheostat in the motor circuit. Likewise this method of drive results in a constant rotating speed (18 revolutions per minute) of the positive carbon, regardless of the rate of feed thereof.

The lineal feed of the positive carbon is variable between 0 and 35 inches per hour and the feed of the negative may be varied from 0 to 8 inches per hour which amply takes care of the consumption rate of all currently available high-intensity projection arc carbons.

The burner accommodates a 22-inch-long positive carbon without resetting, and 4¾ inches of the 9-inch negative can be fed at one setting, this is more than sufficient to last through the burning of an entire length of positive carbon.

Handles for the manual control of the carbons or adjustment of the arc extend outward from the right side of the carbon-feed mechanism and are conveniently located.

The burner as a complete unit may be raised, lowered, and moved laterally within the lamphouse to place the positive carbon crater in the optical axis to the projector.

The positive carbon is fed forward and rotated by a carriage which travels on two ground steel tubes. The right side of the tube is slotted to permit engagement of the carriage follow-pin tooth into the acme-threaded feed screw which rotates within the tube.

Convenient means have been provided to disengage manually the positive carriage follow pin from the longitudinal feed screw to allow rapid hand movement of the carriage in either direction

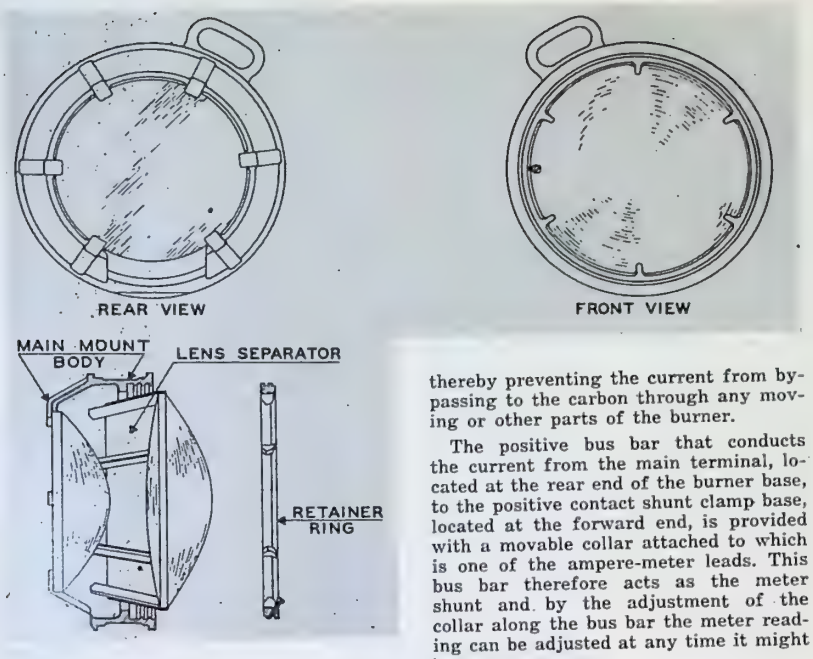


FIG. 4—Diagram of condenser mount.

as may be required for trimming.

A spring-operated collet clamps the rear end of the positive carbon to the rotating mechanism and the simple moving of a lever is all that is required to release instantly the collet to loosen the carbon for changing.

A nickel casting with a circular hole a little larger than the carbon constitutes the positive carbon guide. It is located just back of the positive contacts and the carbon is forced to the bottom of this hole by the angularly machined pads on the carbon contacts which keeps the carbon constantly in a fixed central position.

Floating positive carbon contacts of pure nickel are employed. The adjustable contact pressure spring is located well back from the heat of the arc, and a cam, operated by a special trimming wrench, is provided to spread the contact pressure arms to facilitate easy insertion of new carbons.

By rotating this contact release cam to its limit the spring pressure is completely overcome and both contacts may be lifted upward out of their operating position for cleaning or replacement.

Ahead of the positive contacts are located three nonmagnetic heat baffles each spaced ⅛ of an inch apart from the other, to facilitate the radiation of air between them for cooling. These baffles are held in position by gravity, in machined grooves, hence are easily removable for inspection or cleaning. The first or front baffle is made of a special metal alloy that is almost impervious to the disintegrating effect of the heat and hot gases of the arc.

The entire positive rotating carriage, as well as the baffles and contact spring arm at the front end of the burner, are thoroughly insulated so that current can only reach the carbon via the contacts, thereby preventing the current from bypassing to the carbon through any moving or other parts of the burner.

The positive bus bar that conducts the current from the main terminal, located at the rear end of the burner base, to the positive contact shunt clamp base, located at the forward end, is provided with a movable collar attached to which is one of the ampere-meter leads. This bus bar therefore acts as the meter shunt and by the adjustment of the collar along the bus bar the meter reading can be adjusted at any time it might become necessary.

A permanent magnet of cast No. 5 "Alnico" is employed to draw the positive tail flame of the arc away from the rear condenser lens and also neutralize other stray magnetic fields that might detrimentally affect the burning arc. The magnet support bracket is designed for reversible mounting either to the front or rear face of the right front tube support casting of the burner. This permits a $1\frac{3}{16}$-inch change to be made in the distance between the magnet and the arc. The most rearward position is recommended for arc currents of from 120 to 150 amperes and the forward position for higher currents to 170 amperes (Fig. 6).

Negative Carbon Carriage

In the design of the negative carbon carriage a substantial departure from conventional practice has been adopted because, instead of locating all its mechanism beneath the arc where it is subjected to the intense heat thereof, it has been placed well to the rear and to the left side of the arc. This has enabled us to employ much more substantial construction as well as much closer bearing tolerances, since the temperature at this location is low enough to use ordinary lubricating oil without carbonizing.

The negative carbon is carried at an angle of 55 degrees from the positive carbon axis. This permits operation of the positive crater relatively close to the rear condenser without fear of interference between the negative carbon holder and the condenser-lens mount.

A rack and pinion on the negative carbon feed carriage permit rapid manual striking of the arc and the lowering of the carbon arm when a new carbon is to be inserted.

The negative carbon arm is accurately machined and readily removable and is attached to a metal dowel plate in advance of the insulation point, hence its removal for cleaning or replacement is accomplished without having to break down its insulation or performing any realignment operation.

To counterbalance the weight of the negative carbon arm and its carriage and likewise correspondingly decrease the load on the feed gearing and motor, a flat clock spring is connected to the negative pinion shaft at its inner end

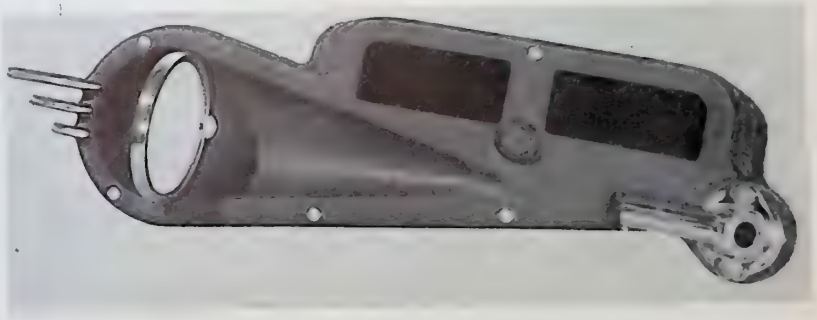


FIG. 5—Arc-image projector on right door.

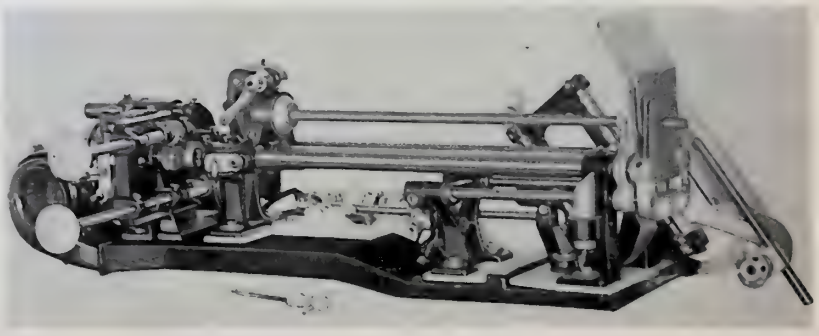


FIG. 6—Burner mechanism.

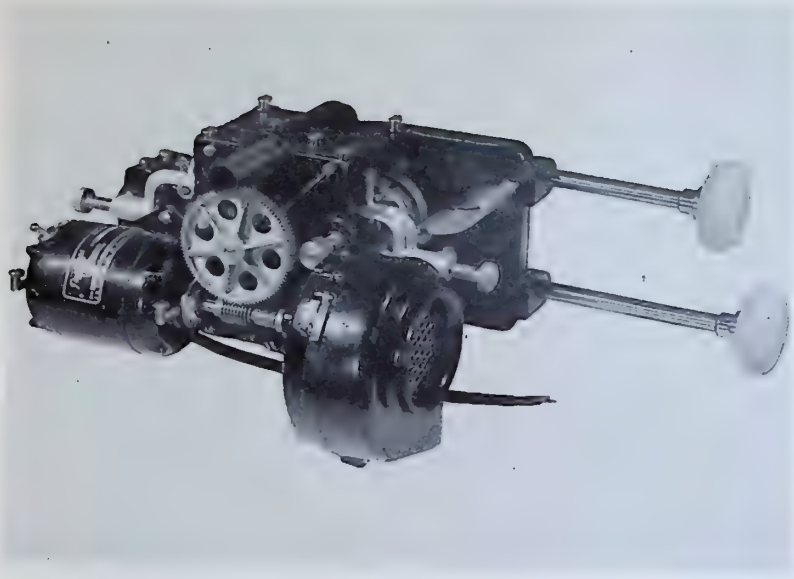


FIG. 7—Feed motor and associated mechanism including ventilation blower.

and the spring housing at its outer end. By this means an effortless feather-weight feed of the negative carbon holder is accomplished.

"Hy-Speed" f/2 Condenser Lens

The Peerless "Hy-Speed" f/2 condenser-lens system is ground exclusively for us by Bausch and Lomb Optical Company of Rochester, New York. The rear lens is obtainable, made of either fused quartz or of Pyrex glass. It is 6¼ inches in diameter. The fused-quartz lens is furnished with a ⅜-inch edge on the rear surface to permit quite a number of resurfacing operations when it becomes badly pitted from exposure to the burning arc. The front lens is made of Corex Glass and is 7⅜ inches in diameter.

The operating distance between the arc crater and the rear surface of the rear lens is 3 inches and the working distance between the foremost point of the front curve of the front lens and the film line is 12 13/16 inches. These operating distances provide 80 degrees side-to-center screen-light distribution.

Light-Heat-Filter Unit

Because of the high order of light and light heat encountered when 160 to 180 amperes is drawn at the arc in combination with our "Hy-Speed" f/2 condenser-lens system, to prevent film damage, some years ago we developed and made available to theatres using these high currents, an air-cooled, glass heat-filter unit. (Fig. 9).

The main frame of this heat filter attaches to the rear face of the rear shutter housing of the projector mechanism and provides the enclosure into which fits the frame for the filter glasses. The glass frame is supported by ears at its top with ample room between all sides of it and the main frame inner walls, to permit free passage of the air blown into this compartment from a centrifugal electric blower.

There are eight filter-glass strips used, each strip is approximately ½ of an inch wide. They mount in their holder vertically and in a staggered relationship to each other. Hence the air stream from the blower may pass completely over all surfaces as well as the edges of each strip of filter glass and, in consequence, efficiently radiate the heat each glass strip absorbs from the light.

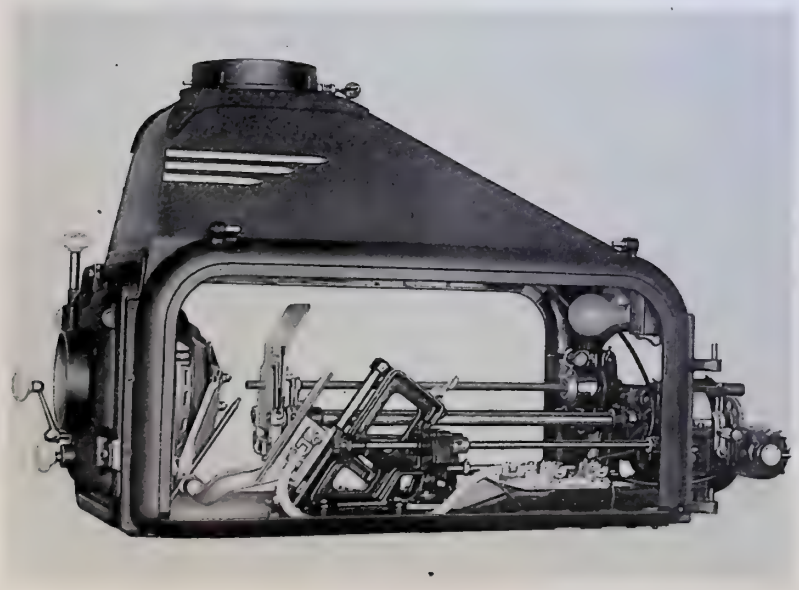
Convenient means are provided to attach the motor-blower assembly to the projector pedestal. We recommend that the blower motor should be connected to the open end of the arc-lamp switch to ensure its operation simultaneously with the energization of the arc-lamp circuit when the arc switch is closed to strike the arc.

In operation the air is conducted from the blower to the hollow compartment of the filter main frame by a flexible plastic tubing of ample diameter. The air directed into the glass frame compartment mounted on the mechanism rear-shutter housing, passes over and all around each individual filter-glass strip and exhausts upward, out of the vent at the top of the main frame into the projection room.

Corning Glass Alko No. 3966 filter glass is employed and has proved to be very satisfactory in performance.

NOTE: The foregoing described equipment has already been installed and is in use by Radio City Music Hall, Roxy Theatre, Balaban and Katz Chicago Theatre, and hundreds of the foremost theatres as well as drive-in theatres in the United States and abroad.

FIG. 8—Left side of lamp showing lamp mechanism.



Water-Cooled Positive Contacts

To aid in the work being conducted by the National Carbon Company at Fostoria, Ohio, on the 290-ampere, 13.6-mm experimental projection arc carbon trim and also the Eastman Kodak Company at Rochester, N. Y., who are concerned with the high light temperatures that film will be subjected to through the use of these currents in theatre projection, we developed and furnished each of these companies a modified Peerless Hy-Candescent lamp that was equipped with water-cooled positive contact units and certain burner mechanism changes to accommodate the higher consumption rate of these carbons.

Probably the most unique item of these modifications is the water-cooled positive contact assembly (Fig. 10).

The facing halves of the contacts are made of pure silver castings, the rear halves are of brass castings. Each pair of mated castings is cupped out in the center section so that when they are assembled together a hollow compartment results for the circulation of water. The inlet for the water into each contact compartment is through a copper tube leading upward to the top of the compartment, the outlet is by another tube at the bottom of the compartment, the cubical content of each contact compartment is 5½ inches.

Extremely satisfactory operations were obtained when up to 290 amperes were used at the arc and with only a ½-inch positive carbon protrusion from the front face of the contacts and without the usual heat baffle plates being used between the arcing end of the carbon and the contacts.

Temperature tabulations were as follows:

Total water flow	0.138 cubic foot per minute (approximately 1 gallon)
Room temperature during test	72° F.
Outlet water temperature before test ...	69° F.
Outlet water temperature after 10 minutes of operation	88° F.
Outlet water temperature after 20 minutes of operation	93° F.
Maximum temperature rise of water above room temperature	21° F.
Maximum temperature rise of water after 20 minutes of operation	24° F.

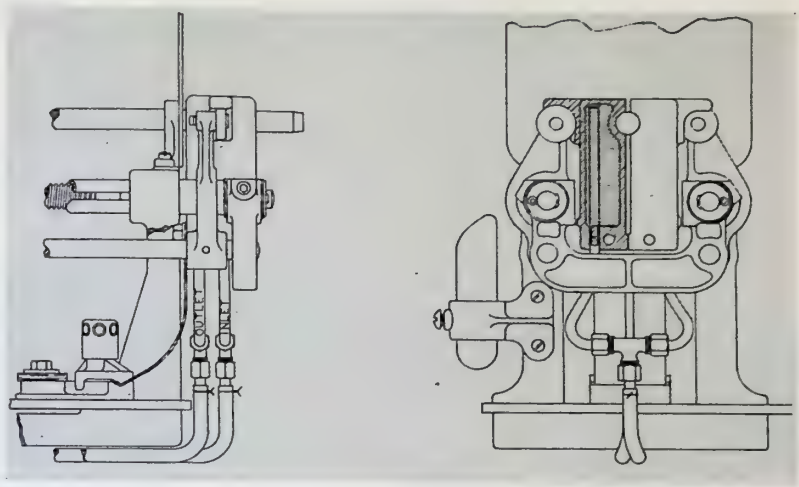
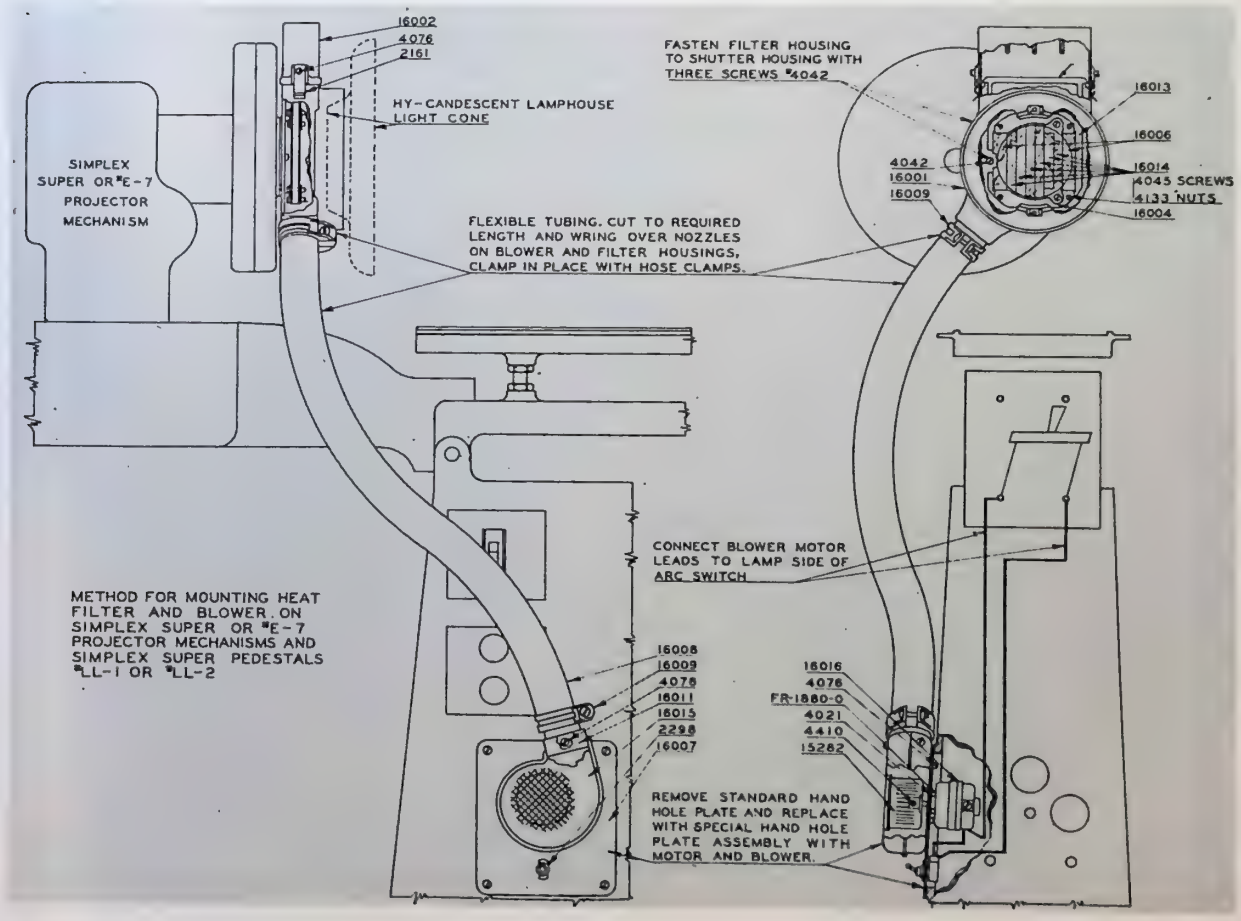


FIG. 10—Special water-cooled positive carbon contacts.

Because this water-cooled contact unit is adaptable to the standard Hy-Candescent projection arc lamp and its operation at 290 amperes was so highly satisfactory we expect to make it available to theatres now using our standard 120- to 170-ampere lamp, who are willing to provide the necessary water-piping requirements for it in their projection rooms.

FIG. 9—Heat filter and blower.



New Motiograph-Hall 75/115 High Intensity Lamp

An Introductory Report that Promises Much from A New Basic Approach to Well Distributed Screen Brightness

The new Motiograph-Hall 75/115 High Intensity Arc Lamp is claimed to provide an extremely brilliant light which should make it ideal for drive-in and large conventional theatres. Completely new and not generally released at press time, its announced features are described and data on its test performance given. Other information has to do with its economy and simplicity of operation. All "bugs" are said to have been eliminated by a year's experimental use of the new lamp under actual theatre conditions.

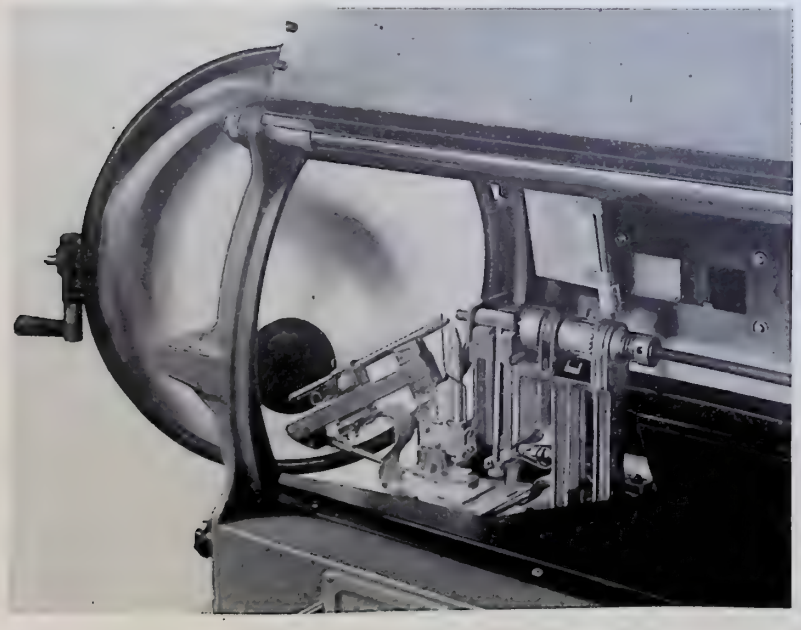
Description

The advent of the drive-in theatre with its tremendous 40 to 65 foot picture widths and viewing distances as great as 800 feet has created a demand for lamps that will give greater light output and better light distribution than lamps designed specifically for conventional theatre screens. While many reflector-type arc lamps and condenser-type lamps have given reasonably adequate screen visibility in drive-in theatres with picture widths up to 40 feet and viewing distances up to 500 feet, they have not provided the high, well distributed brilliance that the average patron has come to expect in motion picture presentations, or must have if he is to see the film without eyestrain. And at greater viewing distances, or under adverse weather conditions, the deficiency is even more marked.

To satisfy this demand Motiograph has specially designed and is now offering a new reflector-type high intensity arc lamp operating in the 75/115 ampere range. Field tests indicate that these lamps emit sufficient light when operating at 85 amperes to meet the extreme demands for greater illumination for both drive-in and large indoor theatre screens. These new lamps owe their exceptionally vivid light to their unique employment of a rotating positive carbon never previously used in reflector-type lamps which permits their operation in the 75 to 115 ampere range. Without a rotating positive carbon even burning and a proper crater form was found to be impossible over 70 amperes.

Another reason claimed for the greater light output delivered by these new lamps lies in the precise positioning of the carbons with respect to each other. The method of positioning employed permits the gases to be retained within the crater where they become superheated and extremely brilliant. The ability of the large 16" mirror—one of the largest utilized in a reflector-type lamp —to collect maximum light also contributes to the greater light output. A device which maintains constant current and accurate focusing also serves to produce maximum screen brilliance at all times.

NOTE THE POSITIONING of rotating positive carbon and negative guide bar in the burner assembly.



High intensity condenser-type lamps burning large carbons at high amperages are capable of producing extremely strong light at the arc. But a by-product of this light is heat in large quantities. In fact there is so much heat that some manufacturers recommend the use of a glass filter between the arc lamp and projector to reduce the quantity of heat energy reaching the aperture in order to prevent the film from reaching temperatures which cause buckling and consequently "in and out of focus" conditions, to say nothing of the deleterious effects on the film itself. Unfortunately, filters of this type materially reduce the visible light as well as the invisible heat energy. In most instances, then, even though the source produces a large amount of light, the useful visible portion of it reaching the screen is minimized to varying extents. It may even be that only very little more than that which can be obtained from a lesser light source actually is used.

Because of the extremely high intrinsic brilliancy of the arc resulting from the arc controls in the new Motiograph lamp, the total light output contains a high percentage of visible light in proportion to effective heat radiation. Therefore, except in the extremely high amperages resulting from some extreme light demands, the need for a filter is eliminated. Motiograph lamps operating at 85 amperes have been installed with three different makes of projector mechanisms and while some run cooler than others, in no case has there been any operational difficulty nor any report of film damage. It is, however, recommended that external blowers such as those supplied with Motiograph AA projector mechanisms be used with the lamps to further reduce any possibility of film damage arising from heat.

Screen Brilliancy

Tests have indicated that these new lamps operating at 85 amperes produce 19,000 lumens of light. Some high intensity arc lamps operating at 70 amperes will average 13,000 lumens. In the Motiograph-Hall models, an automatic focus control, a combination optical and electrical device, constantly holds the crater of the positive carbon at the exact focal point of the mirror within the exceptionally narrow limits of 7/1000ths of an inch. This unique feature prevents possible variations in light intensity that might occur with lamps of less precise focus control.

Low Operating and Replacement

The Motiograph-Hall lamps are designed to use either currently available 9 mm. or 11 mm. high intensity positive carbons. When completely developed 10 mm. carbons become available, they can be used also. The cost of 9 mm. positive and 5/16" negative carbons is said to be very little more than the cost of the 8 mm. positive and 7 mm. negative carbons used in reflector-type arc lamps in the 65-70 ampere range. By similar contrast the cost of such carbons is said to be about one-third of the cost of the Super H. I. 13.6 positive and 7/16" negative carbons used in condenser-type lamps operating in the 140-180 ampere range. As another consideration the 16" diameter reflectors, manufactured by Bausch & Lomb to exacting specifications, are said to be only slightly higher in replacement cost than the smaller sized reflectors used in reflector-type high intensity lamps in the 65-70 ampere range, and very much less costly than either the glass or quartz condensers used in condenser-type lamps operating in the 140-180 ampere range.

Simplicity of Operation

Once the arc is struck, the projectionist need only watch a pilot light on the lamphouse, which indicates lamp performance. This light flashes when the current varies 2% above or 1% below normal. When such variations happen, the control equipment adjusts the arc gap to optimum operation. Constant adjustment of the manual controls by the projectionist is largely eliminated.

Nor is there any need for the projectionist to periodically adjust the reflector. The reflector in its holder is permanently mounted and forms the rear door of the lamphouse. This method of mounting the mirror and securing it to prevent movement keeps the reflector, the aperture and the lens in perfect optical alignment.

If the automatic focusing device should fail to operate for any reason, the projectionist can operate the burner mechanism by means of a conveniently located knob in the operating side of the machine. At initial installation time the entire carriage is naturally positioned so that the light spot will be of the correct dimension and centered on the aperture. In the event the burner mechanism should be removed and subsequently replaced so that the relation of the spot to the aperture is disturbed, manual adjustment to raise or lower the carriage or to move it from side to side can be made by two additional knobs located on the operating side of the lamp.

Construction

The moving portions of the lamp consist of comparatively few parts; and all of these have been carefully machined and made wear-resistant. The arc burner mechanism is built as a complete unit which can be readily removed if servicing is required.

The spacious housing is constructed with smooth inside surfaces to facilitate cleaning. In addition, a false bottom is provided which extends under the entire burner mechanism. It can be readily removed.

The positive carbon contacts are made of bronze. This alloy possesses the best heat conductivity among metals and alloys, consistent with resistance to oxidation and scaling. The contact surfaces are lined with pure silver 1/16th of an inch thick. Both silver and bronze will readily conduct current and dissipate heat rapidly, without scaling.

The lamphouse is comprised of a formed heavy gauge sheet steel base to which two sturdy aluminum castings are attached by polished steel rods. These castings form the front and back of the housing. Both doors are double-walled to effectively insulate the outside surfaces from the high arc temperature. The usual ruby glass observation ports and arc image projector are provided.

Production Background

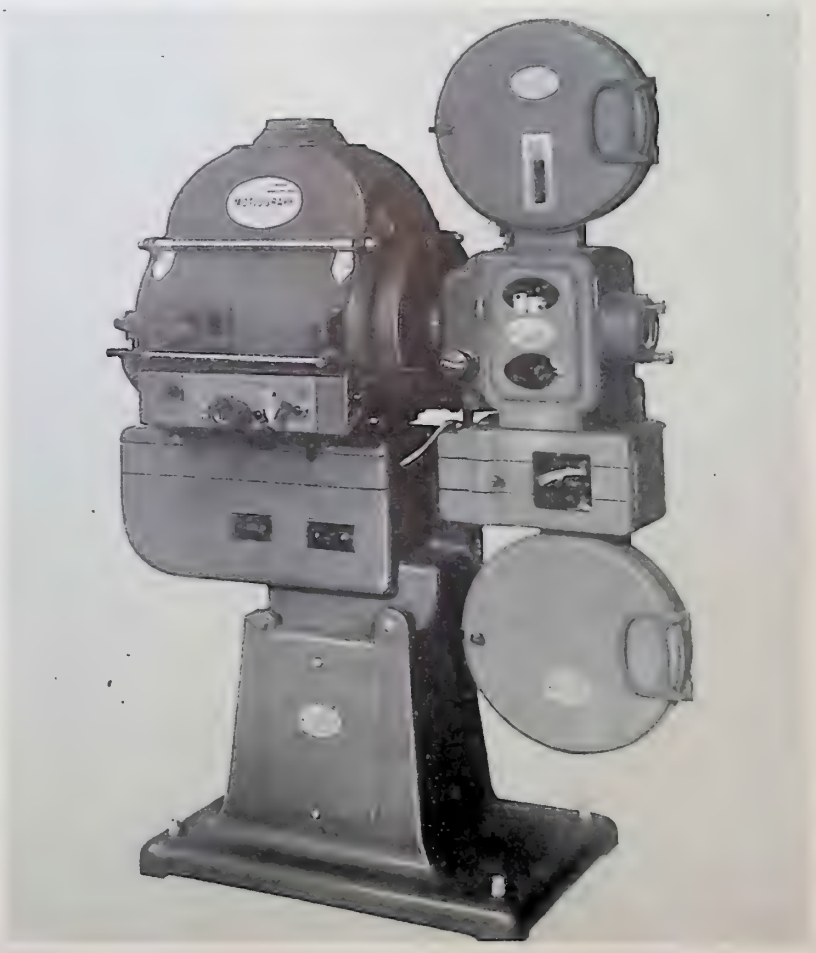
The new lamps are being built by Motiograph craftsmen under the personal supervision of Theodore O. Hall who has had a lifetime of experience as a designer of projection light sources. The new models are designed and engineered to give maximum performance. They are precision built and easy to operate and adjust.

Experimental models of lamps were in actual operation in drive-in theatres for over a year at a number of points throughout the country prior to full-scale production. The experience acquired in these installations enabled the designer and the manufacturer to eliminate the minor difficulties which are occasionally part and parcel of a newly designed product.

Conclusion

The Motiograph-Hall 75/115 High Intensity Arc Lamp, tested and validated under actual operating conditions in conventional and drive-in theatres in 1948, is scheduled for plant production in 1949. Although an inexorable press time prevents any further report on the new lamp in the present edition of THEATRE CATALOG, detailed engineering and fabrication data will be collected and made available in the 1949-1950 edition. In the follow-up article, the editors plan to supplement the introductory material presented above with a complete technical data survey, including tabulated results of the new lamp's performance during its first and experimental year in the field.

IT IS A COMPACT UNIT with the Motiograph projection-sound system but can be adapted to others.



Results of Electronic Controlled Arc Tests

Additional Data on Actual Theatre Use of New Forest Lamp Indicates Good Light at Carbon and Power Saving

J. K. Elderkin
Forest Electronic Co., Inc.

In the 1946-47 THEATRE CATALOG, J. K. Elderkin discussed the new Forest electronic-control arc lamp, primarily from the standpoint of the theory of electronic feed as contrasted with conventional mechanical feeds. Actuated and driven by solenoids rather than clutches, gears, or other fast-moving parts, the Forest electronic projection lamp was designed to eliminate most of the troubles arising from frictional wear. Since that time the new lamp has been built and submitted to actual theatre tests and the results of interest to theatremen are described in the present article.

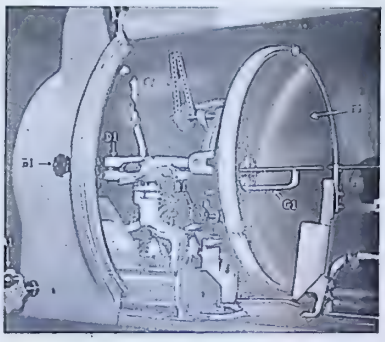
When they were putting the finishing touches on the new carbon feeding mechanism already alluded to, Forest engineers stumbled on what looked like a startling new technique for burning the carbons—and which might be an improvement upon the so-called suprex or simplified high intensity method. It held out such bright hope for the future that the company, after announcing the production of a new lamp, temporarily withheld the lamp from the market while they went into a research and development huddle. Engineers went to work in earnest on the discovery and with fruitful results; the end-product of their research was displayed at the September, 1948, TESMA Show in St. Louis.

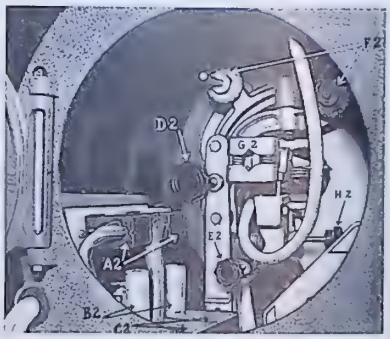
The research program included a study of the burning characteristics of the carbons with respect to the magnetic field and the amount of air required at the arc. This made possible the development of a magnetic field which maintains the bright spot area at maximum brilliancy; and the placing of special air inlet ports positioned to supply the arc with correct amounts of air.

Research also disclosed that entirely new burning characteristics could be obtained which would produce much more light with no increase in energy consumption and with a marked saving in carbon consumption.

As all theatremen know, the primary source of arc light is rare earths and chemicals concentrated in the core of a carbon — their actual compositions are well guarded trade secrets. These are burned in gaseous form after being volatilized by electric current; and, because the flow of electrons from positive to negative, the action creates a saucer-shaped depression in the tip of the positive carbon. This, naturally enough, is called a crater. This crater light is collected by a reflector or a condenser lens and projected through the film to the screen.

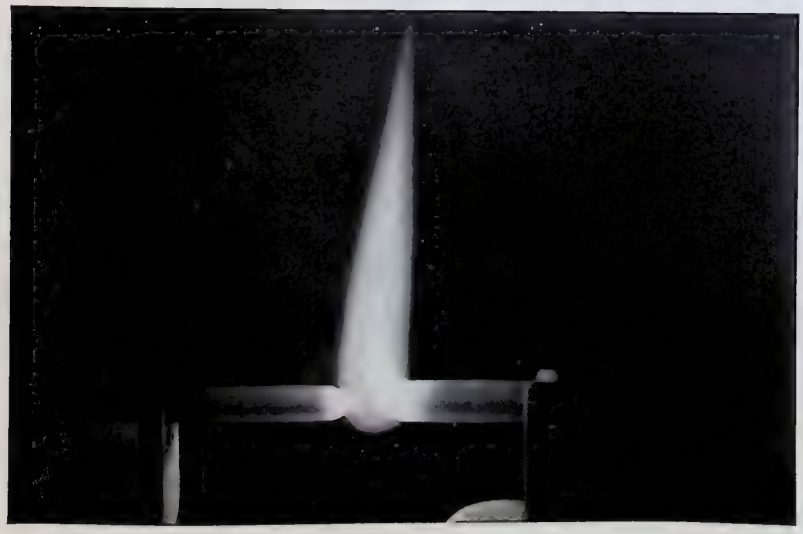
The new light source is similar to the old high-intensity arc in that the tail flames of both are longer than the tail flame of the suprex arc, which has a short angular one. However, the white light in the tail flame of the new electronic arc seems to burn more intensely

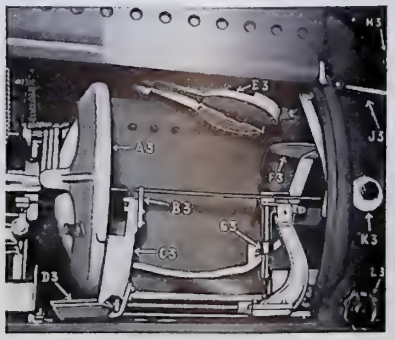




TOP: (A1) neg. manual control; (B1) neg. carbon speed control; (C1) reflector adjustment from front of lamp; (D1) neg. carbon holder; (E1) neg. carbon guide sidewise adjustment. Center, view through back door of lamp: (A2) pos. and neg. timer receptacles making all timer connections; (B2) shields over pos. and neg. timer tubes; (C2) pos. and neg. timers; (D2) reflector adjustment; (E2) vertical neg. carbon guide adjustment. (F2) horizontal and vertical reflector adjustment control from front of lamp. Bottom: (A3) 14-inch reflector; (B3) positive carbon guide; (C3) drip shoot; (D3) drip cup; (E3) flame shield raised; (F3) front dowser; (G3) spring tension clamp.

SIDE VIEW of arc in action, controlled by new method of "Electronic Control", 33V., 50 amps., dc;—6M. negative, 7MM. positive carbons. The negative gases are compressed into the positive crater.





than its counterpart in the tail flame of the high-intensity arc. Unlike the high-intensity arc, the electronic arc does not rotate its carbons or place them at an angle to each other.

The light from the Electronic Arc emanates from two distinct sources—the crater and the tail flame, similar to the tail flame of the high-intensity arc. The very high intrinsic brilliancy of the electronic arc is obtained by compressing the negative arc stream and confining it within the crater of the positive carbon. Thus, a substantial portion of the brilliantly luminescent vapors emanating from the negative carbon produces a dazzling white light of extremely high candle power. Because its tail flame is very long and narrow and rises straight up in the air at a right angle to the arc, the electronic arc does not burn with the mushroom effect and 45 degree angle short tail flame of the suprex arc.

Summing up, the true high intensity effect of the electronic arc is accomplished by a combination of three factors; proper air stream admitted at the proper point with relation to the arc; electronic directional arc control; proper and constant electronic carbon feeding mechanism.

As a matter of fact, under tests made with a 70 ampere arc, this lamp was found to deliver 15,000 lumens, the maximum light that film can tolerate without damage. This will give a clear visible picture on screens as large as 50 feet in width, and at a distance of 500 or more feet from the projection booth. Designed to burn any size carbon at any desired amperage, the electronic lamp is a desirable lighting source for theatres of any size, from intimate cinema art salons to wide-open-space drive-ins.

There are many other interesting features of this unique lamp not mentioned in the original THEATRE CATALOG article which contribute to optimum projection. For example, full floating positive and negative carbon holders maintain the carbons in perfect alignment at all times, and controlled spring tension clamping prevents cracking of carbons from the application of too much tension.

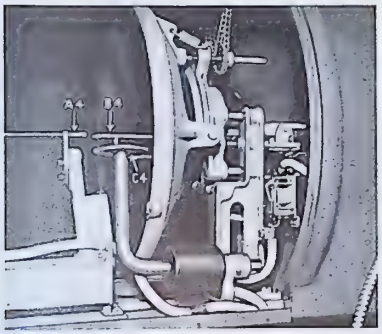
A 14-inch diameter Bausch and Lomb reflector, securely mounted to the lamp base, maintains proper alignment without frequent adjustment. Reflector adjustment in both the horizontal and vertical planes is made at the outside front of the lamp rather than at the rear. This permits the projectionist to see the screen while he is making an adjustment. The reflector can also be moved forward or backward for peak adjustment of focal length, making it unnecessary to shift the lamp on its pedestal for this adjustment.

When the carbon in either holder has burned to a length at which it will last only 22 minutes longer, a small warning lamp lights and stays lighted until the lamp is re-trimmed.

The arc image device is designed so that it can be placed on either side of the lamp at will, projecting a clear image of the arc visible from either side.

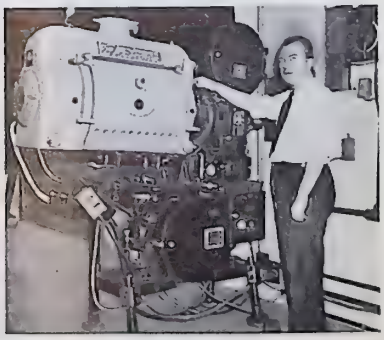
The solenoid feed control, developed by Forest engineers, by maintaining the arc in correct and constant focus, produces peak screen illumination throughout the show, without change in intensity or color; holds the arc gap continuously at exactly the correct aperture at which the arc burns most efficiently and with the greatest light output. This was found to result in a considerable saving in carbon consumption—a saving amounting to between 20 and 25 per cent, together with proportionate savings in electric current.

Now fully tried and proven in the projection booth, the new Forest Electronic projection lamp has not only justified the original claims made for it but even shown that these, if anything, were on the conservative side. Savings in current and carbon costs, simplicity of operation and maintenance, efficiency and consistency of lighting are all desirable characteristics. In the Forest electronic lamp they combine for outstanding performance.

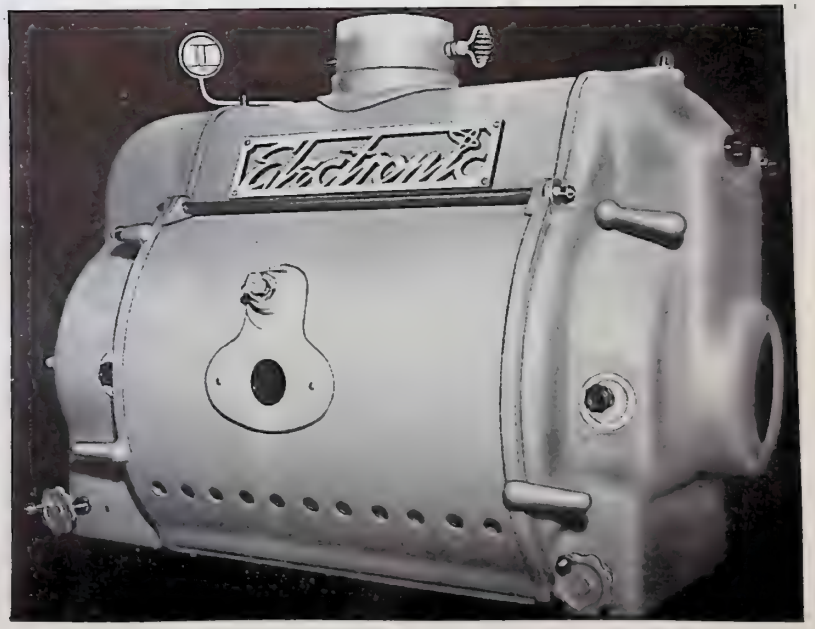




TOP. View showing electronic arc magnetic control producing high intensity arc. (A4) Positive carbon. (B4) Neg. Carbon. (C4) Electronic arc magnetic Control. Center. View through back door showing negative carbon feeding mechanism. (A) Ratchet Pick up adjustment. (B) Pawl. (C) Ratchet gear driving carbon carrier. (D) Solenoid. (E) Plunger actuating pawl of ratchet gear. (F) Gear for manual carbon feed. Bottom. Photograph of one of the many operational tests made under actual theatre conditions. This photograph was taken at Avon Theatre, Newark, N. J., where the regular projectionist, Charles Earle, recorded carbon and current consumption.



SIDE VIEW of electronic lamp. The two bottom knobs are positive and negative manual feed controls. At center sides are positive and negative electronic timer control knobs. At front are two reflector adjustment knobs. Warning light extreme top front. Unusual light output is claimed for this new development.



A New Line of Projection and Sound

Ballantyne 1948-49 Equipment for Theatre Sound and Projection Offers One More National Equipment Line

By J. R. Hoff
The Ballantyne Company

This article describes a new complete line of projection and sound equipment for the modern motion picture theatre. Included are: projectors; projector bases; soundheads; amplifiers; speakers; and rectifiers. A concise summary of data on each item is given together with advantages claimed for the equipment by the manufacturer. This company's drive-in theatre equipment will be found listed and described in the section on Drive-ins, under appropriate headings.

During the past year the Ballantyne Company, manufacturers of theatre sound equipment since 1932, has introduced a number of new equipment items to the industry. Included are the new streamlined soundhead, a new streamlined projector base, a new 4570 high intensity arc lamp, a complete new line of Lightmaster high intensity rectifiers, an all-new line of two-way horn systems, the new MX series drive-in theatre amplifiers and the new Soundmaster drive-in speakers. Already established in the field as a specialist in theatre sound equipment, the Ballantyne Company for the first time in its history has entered the theatre projection field, having purchased the complete assets of the L. J. Gardiner Company, and is now manufacturing an improved projector under the designation of the Ballantyne Model "R" Projector.

New Model 8 Soundhead

Ballantyne has added a Model 8 soundhead, a streamlined version of the Royal Soundmaster. Production on the lower priced standard Model 6 soundhead will be continued.

The outstanding feature of the new Model 8 soundhead is a novel gyro-filter developed by F. C. Largen, Sr., design engineer at the Ballantyne Creighton, Nebraska, plant. Possessing allegedly perfect gyroscopic action, the filter is composed of all-steel units, ball-bearing mounted and permanently sealed, assuring a smooth film travel over the rotary scanning drum and a life time of trouble-free operation. Tests show it to eliminate as completely as possible all flutter in operation. It is claimed to be positively foolproof, and will not get out of balance nor leak oil.

Other features include the following: The motor is enclosed in a well-ventilated, streamlined housing that is attached directly to the main frame casting of the soundhead; and a large handwheel is located at the front of the motor housing for convenience in threading soundhead and projector. The all-gear projector drive and the gyro-filter are protected by a single guard with provision for oiling without removing the guard. Doors are heavy corrosion-resistant cast aluminum, designed for perfect alignment with the doors of the projector mechanism. Inside, the soundhead is finished in white porcelain enamel—beautiful in appearance and easy to clean. The outside of the soundhead is finished in gray wrinkle to harmonize with projectors, bases, arc lamps, magazines, and other equipment.

New Hi-Intensity Arc Lamp

The most recent development in Ballantyne hi-intensity arc lamps is a multi-purpose lamp—a lamp which allows the operator to use a given amount of amperage for optimum light in his theatre and yet have reserve amperage for outstanding contingencies, such as color film and film of greater density.

Every feature in a modern hi-intensity lamp is claimed for the Lightmaster Model 4570. It has a 14-inch Bausch & Lomb reflector at a 32-inch working distance, designed for optically perfect performance with an f/2.0 lens.

From 45 to 70 amps, and at any light level between, the Lightmaster Model 4570 projects a steady, brilliant light that is distributed uniformly over the complete screen area. The projectionist may select the amperage needed for any given picture by setting the rheostat for the proper positive carbon feed, and, if needed, by a simple adjustment of the micrometer drive on the negative carbon, can obtain the steady light intensity desired.

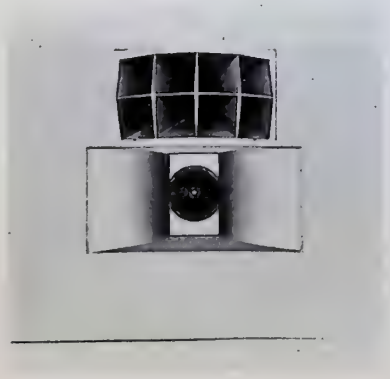
Obsolete, troublesome electro-magnets are replaced by a steel loop, mounted on the carbon guide and magnetized only when the arc is burning. The lamp is designed particularly for drive-in theatres and actual tests show that at 70 amperes it projects 15,000 lumens at the screen. This is the maximum amount of light that can be projected through an aperture plate without danger of damage to the film.

Internal features include: Positive carbon holder designed to hold either 7 or 8 mm. carbons, negative carbon holder to accommodate either 6 or 7 mm. carbons; jaws that cannot break carbons when making carbon trim; positive and negative carbon support near arc; precise carbon positioning — both vertical and horizontal negative alignment means provided; dual feeding—both negative and positive carbons are fed independently by separate feed screws; full 10-inch travel on positive carbons; reflector held in cast aluminum frame and adjustable on its optical axis; non-wearing, oil-less shafts—full ball-roller and self-

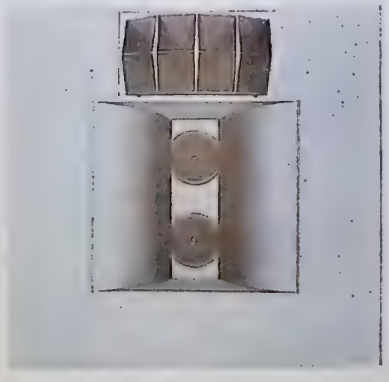
SOUNDMASTER Model 14 two-way horn system.



SOUNDMASTER Model 20 two-way horn system.



SOUNDMASTER Model 30 two-way horn system.



oiling bearings throughout; and uncluttered lamphouse—no rods, pans, wires, etc.

External features include: Ammeter, rheostat, arc imager through optically corrected lens and arc vision windows; mirror flame shield and light cut-off dowser operated by dowser handles on both sides of lamp; manual controls for arc positioning outside lamphouse on operating side; accessible terminal plate; fully ventilated through double, heavily insulated doors; and finished in gray wrinkle with anodized aluminum trim.

Lightmaster Rectifiers

Lightmaster rectifiers are an economical and dependable means of converting alternating current to direct current for the operation of arc lamps.

Enclosed in attractive, 16-gauge steel cases, finished in gray, baked-on wrinkle paint, the Lightmaster line is complete for the entire range of 40 to 80 amperes. Included are the 4-tube, 40-amp. designed for 1 kilowatt lamps; the 4-tube 60-amp. single phase, and 4-tube 60-amp. three phase for 45-60 amp. lamps; and the 6-tube 80-amp. single phase, and 6-tube 80-amp. three phase for 45-80 amp. lamps.

Compact and streamlined, the rectifiers require little floor space and can be placed either directly under the lamp being served, or can be operated from a remote corner. The housing is fully ventilated with a natural draft escaping through slotted sides and top. The top is hinged to provide ready access to tubes.

Full provision is made in all rectifier types for wide range voltage adjustment and connector strips and conduit wiring holes are standard. These rectifiers are available in 50 or 60 cycles at the same cost.

Model R Projector

As heretofore mentioned, the Ballantyne Company purchased the Gardiner Super Projector from the L. J. Gardiner Company, of Columbus, Ohio, in 1947. The projector is again in production and bears the designation of the Royal Soundmaster "Model R".

Many of the outstanding features of the projector will be retained, such as the direct drive, barrel-type rear shutter, the easily removable film gate for inspection and cleaning, improved rigid gate mounting, framing knob on both working and non-working sides of the projector, double bearing intermittent, cast iron main frame, and alternate steel and fibre gears which assure quiet service.

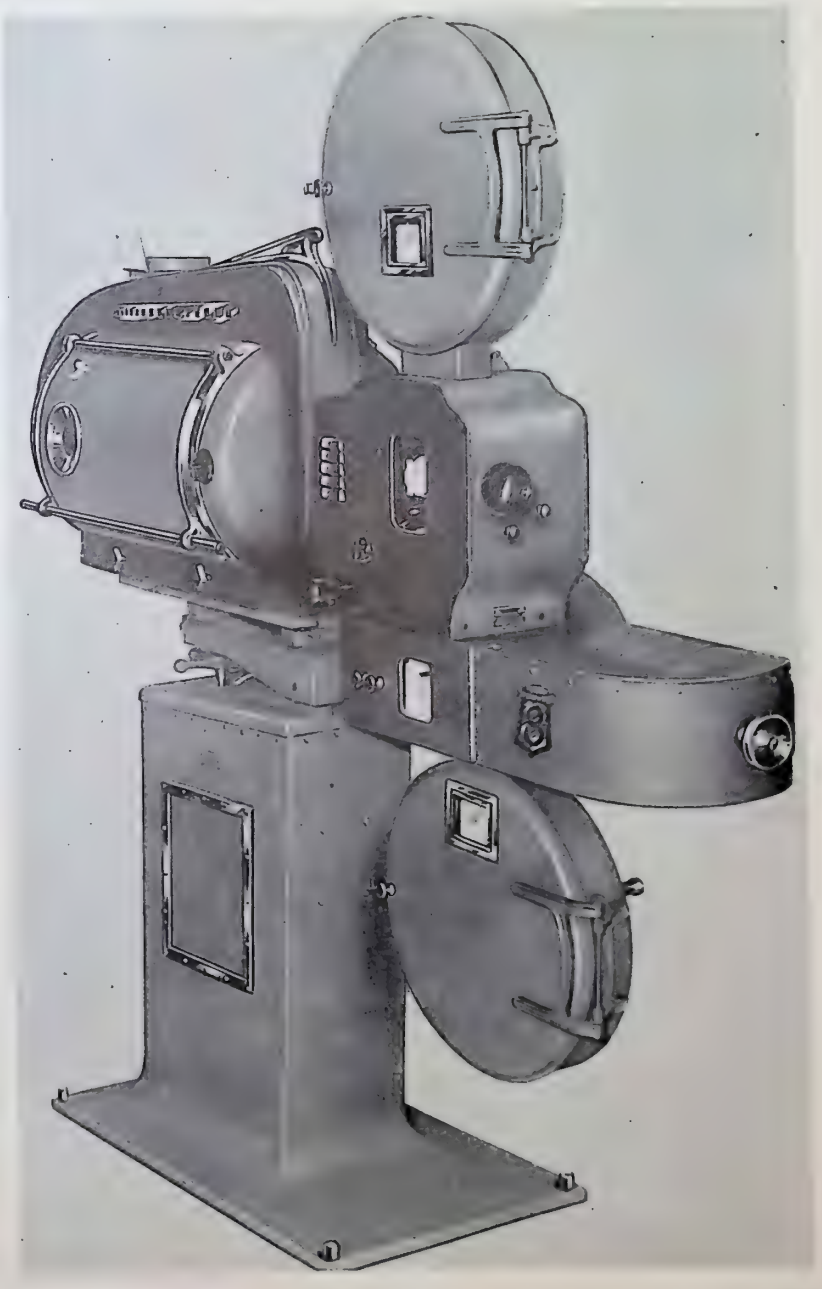
The Royal Soundmaster direct drive barrel-type rear shutter is built into the projector mechanism, with all parts of the mechanism properly co-ordinated to assure efficient, trouble-free operation—no drag on mechanism, no strain on any of the gears. The Royal Soundmaster shutter is the only barrel-type rear shutter that is driven directly from the intermittent flywheel shaft. This unique method of construction eliminates the possibility of backlash developing between the intermittent and the shutter. The perfect dissolving effect of the barrel-type rear shutter, on the light beam, is accomplished without the complicated synchronizing apparatus necessary where the conventional disc type of double front and rear shutter is used. The Royal Soundmaster barrel-type rear shutter is equipped with flanges that provide air cooling of utmost efficiency.

Among the changes now being incorporated in the improved projector are a complete new streamlined external design, overall enlarging of projector to provide spacious internal working room, shock-proof spiral gears, micrometer lens focusing, full width doors to provide adequate working space, and heavy non-warping aluminum doors and housing.

Model 1800 Base

As a complement to the new Model R projector and Model 8 soundhead, a new Soundmaster base is available for immediate distribution. Attractively decorated in chrome, the base is modern-styled and streamlined with a forward slant that adds to an attractive appearance. The Model 1800 is available in the "Hi-tilt" for drive-ins as well as standard theatre use. The Hi-tilt has an unusual

THE NEW BALLANTYNE Projection and Sound assembly consists of: Royal Soundmaster Model R projector head, Royal Soundmaster Model 8 sound head, Lightmaster Model 4570 hi-intensity arc lamp, and Royal Soundmaster Model 1800 streamlined base. Also in the line are rectifiers and horn systems.





SOUNDMASTER MX-24 power or booster amplifier.

reverse angle tilt as required for use in drive-ins and eliminates the need for shoring up as in a conventional base.

The Soundmaster line of projector bases is designed and constructed to meet all of the requirements of present-day modern projection—built like a battleship—a steel column electrically welded to a heavy steel base plate, and weighing over 200 pounds each, they provide rock-ribbed foundations for sound and projection equipment. Also, the heavy steel base plate and welded construction assures safe delivery at destination without breakage in either domestic or export shipments.

Over 50% of the weight of the Soundmaster base is in the steel base plate—right on the floor, providing a rigid formation that eliminates any possibility of vibration.

Leveling of the Soundmaster base is accomplished through four threaded screws located in each corner of the steel base plate, making possible proper alignment of the projected field on the screen and at the same time permitting solid contact with the floor, regardless of how uneven it may be. A convenient hand wheel adjustment is provided to meet all conditions of vertical angle or tilt. Provision is also made for lateral alignment of the lamphouse and projector.

Royal Soundmaster and other late model soundheads attach directly to all models of the Soundmaster projector base with no other adaptor or soundhead support arm being required. Proper support arms are available for many other model soundheads.

The lamp carriage will accommodate Lightmaster and all other standard type projection arc-lamps. Soundmaster projector bases are built for standard booth requirements, but are available also for special heights for non-standard booths.

Two-Way Horn Systems

Ballantyne has added one entirely new "Golden Voice of the Silver Screen" two-way horn system to its line and replaced all baffles in its other two-way horn systems with a new, acoustically reinforced low frequency baffle.

According to I. M. Brown, chief engineer, the new Model 14 two-way horn system, designed for the smaller theatre, is notable for its simplicity in design and smooth high and low frequency characteristics.

Royal Soundmaster Models Nos. 14, 20 and 30 all have large, completely metal-cased, acoustically treated, high frequency multi-cellular horns with a high frequency driver unit using an Alnico-5 permanent magnet. Each of these models also has "XL" Alnico-5 permanent magnet 15-inch low-frequency speaker units which the company claims give a high efficiency in the conversion of low frequency response. These improved speaker units with their extra driving force require a special acoustically reinforced low-frequency horn baffle. Ballantyne engineers have met this problem and now all models of Two-Way Horn Systems with these special baffles are available at no extra cost. This baffle is notable for its simplicity in design in that it makes no use of compensating chambers or other devices which tend to



THE NEW Soundmaster MX-20 preamplifier driver.

distort the sound. The low frequency speaker is mounted so that the speaker itself is acoustically loaded. The high frequency driver unit is connected to an all metal multi-cellular horn to provide the necessary high frequency coverage.

To assure outstanding performance of "The Golden Voice of the Silver Screen" Two-Way Horn Systems, a critically turned dividing network is provided with each system, with a crossover point of 500 cycles. Provision is made for five steps of high frequency attenuation to adapt the horn system to the acoustical characteristics of the auditorium. Standard input impedance of this dividing network is 500 ohms.

Other Equipment

The Ballantyne Company is continuing in their line their regular PD-50, 55, and 56 series theatre amplifiers, as well as their Arcmaster one Kilowatt lamp.

WELL! WADDA YA KNOW?

International Projector Corporation, and, for that matter, the entire equipment manufacturing fraternity, may take justifiable pride in a letter at hand from George L. Miller, projectionist at an eastern theatre, who comments on the fact that a certain E-7 projector head "was put in operation on Feb. 10, 1939 . . . ran 65 hours or more per week for nine years and five months without any new parts except one feed sprocket . . . and at no time required attention or adjustment of any kind."

That, in any man's league, is service, and it must start way back at the factory where the designing and machining starts.

Now, for the benefit of the boys who use slide rules and like figures, check this: (1) nine years and five months equals 490 weeks; (2) as this head operated only half the time, 490 weeks equals 15,925 running hours; (3) at 60 minutes to the hour, 15,925 running hours equals 955,500 running minutes; (4) as the average film speed is 92 feet per minute, 955,500 running minutes equals 87,906,000 feet of film; (5) as there are 16 frames (or individual pictures) per foot of film, 87,906,000 feet of film equals 1,406,496,000 individual pictures for which this projector head stopped, flashed on the screen, and went on, (6) as there are three individual actions which take place . . . Oh! the H--l with it!

A New 35mm Projector for Theatre Use

Details of the Purpose, Engineering, and Operating Factors of the Recently Introduced "Brenkert #60"

By R. H. Heacock
RCA Victor Division, Radio Corporation of America
Camden, New Jersey

The new Brenkert 60 projector is a companion to the Brenkert Deluxe 80 projector. It has the same automatic lubrication, heavy duty construction of both intermittent mechanism and gear train, and removable sub-assembly design which have been so satisfactory in the Brenkert Deluxe 80 projector. The Brenkert 60 projector is available with either a single rear shutter or a single rear and single front shutter. Through simplification of design an approximate saving of 20% has been effected, so that the Brenkert 60 incorporates outstanding features and highest quality projection throughout its long life, but is within the price range of the smaller size theatre.

In 1939 the Brenkert Light Projection Company (now a Radio Corporation of America subsidiary) introduced to the theatre field a strikingly different 35mm projector. Three unique features of this projector were: (1) automatic lubrication (2) heavy duty construction of both intermittent mechanism and gear train (3) easily removable sub-assemblies. Typical of the practical field acceptance of these features is the very first installation. A pair of Brenkert Deluxe 80 heads were installed in this theatre in 1939 and this same pair of heads has been continuously operating ever since. The cost of replacement parts has been negligible and these units have not been overhauled to date. Even so, projection is of the highest quality, and the exhibitor is so completely sold on Brenkert features, that every new pair of heads he purchases for other theatres of his chain are Brenkert projectors.

Until the introduction of the new Brenkert 60 projector, we had available only the Brenkert Deluxe 80. Many exhibitors and owners of smaller theatres and chains were anxious to obtain these unique Brenkert features in a medium priced projector. In answer to this wide spread demand, it was decided to enter the medium price field with a new Brenkert projector. In order to appreciably reduce the price we were faced with two alternatives. The first would be a retention of the same precise tolerances in manufacture which would result in a projector of highest quality and through the elimination of certain expensive deluxe refinements to effect the necessary price reduction. The second alternative would be to so open up manufacturing tolerances that overall manufacturing costs would be effectively reduced, but of course, the end product would be far from the long life precision mechanism typified by the Brenkert Deluxe 80 projector.

We believe that through the past nine years the fact has been well established that Brenkert projectors continue to provide highest quality projection with a minimum of maintenance cost throughout their very long life. It therefore seemed essential to continue this policy and produce only a projector which is a truly precision device in every sense of the word. The second choice outlined above was eliminated and a projector was produced which is made to the same precise tolerances as the Brenkert Deluxe 80, but in which we have replaced certain deluxe refinements with rugged, simpler counter parts.

Design Features

Now that we have outlined essentially how we decided to proceed with the general design and manufacture of the Brenkert 60 projector let us get down to more specific details. We can do this more clearly with photographs. Figure 1 clearly indicates the close similarity between the Brenkert Deluxe 80 on the left and the Brenkert 60 projector on the right.

Figure 2 shows the gear side of these projectors. Here we can appreciate the simplicity of the new Brenkert 60. The essentials of highest quality projection are all present. The use of the long single shutter shaft, which runs from the rear shutter all the way through to the front shutter, together with its associated drive, is appreciably less complex and therefore markedly less expensive to produce than the more intricate double rear shutter drive of the Brenkert Deluxe 80.

Automatic Lubrication

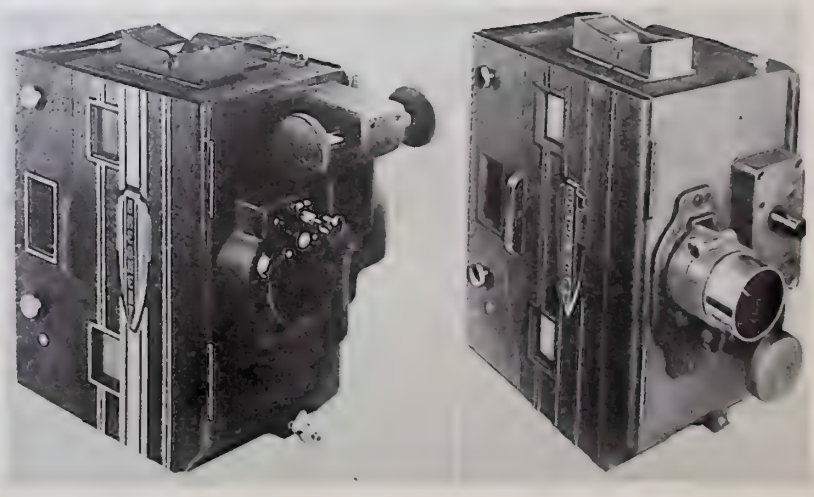
All Brenkert projectors have three most important features which guarantee and supply rock steady projection throughout a long life. The first of these features is Automatic Lubrication. Figure 3 shows this feature as applied to the Brenkert 60 projector.

All moving parts of Brenkert projectors are automatically and continuously lubricated. No hand oiling is required. Castings are specially treated to eliminate possibility of oil leakage.

A positive driven pump inside the projector main frame casting delivers a continuous flow of oil through a large copper tube from the reservoir at the base of the casting to a rotary oil distributor at the top of the gear train. This rotary oil distributor is perforated in such a way that the various holes are in line with each gear and bearing in the gear train. When the projector is in operation, oil is pumped from the reservoir to the rotary oil distributor and then showered over all moving parts.

All shafts are spiral-grooved the entire length of the bearings. Oil is forced along the entire length of the bearings continuously and drains back into the reservoir. A full pint of oil is used in each Brenkert projector. This oil circulates continuously throughout the projector, including the intermittent mechanism. The circulating oil which acts as

FIGURE NO. 1



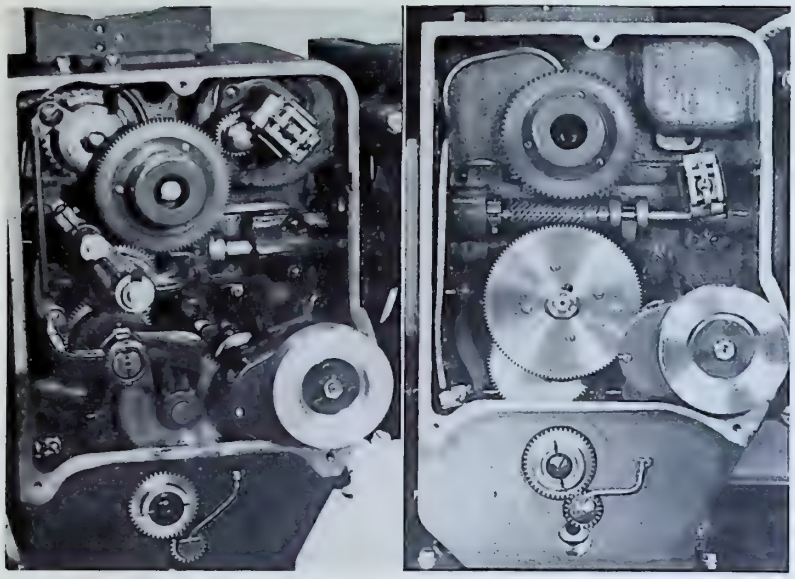


FIGURE NO. 2

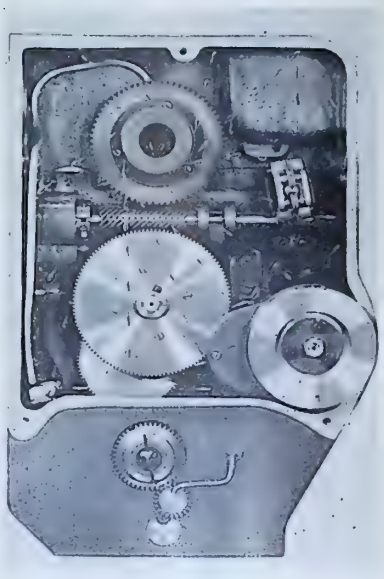


FIGURE NO. 3

a cooling system as well as a lubricating system carries away any heat that may be generated in any part of the projector mechanism.

Brenkert's positive method of continuous automatic lubrication provides each projector with the right kind of lubrication, at the right time and in the right place. This means longer lasting high-quality performance, longer wearing of all parts, low maintenance cost. All rotating shafts are carefully designed so that oil cannot get into the film compartment or soundhead. THE OIL IS KEPT IN, AND DIRT IS KEPT OUT. Thus, with the film kept clean and free from oil, the projected picture is clearer and the sound is free from distortion.

This method of lubrication is far superior to the more conventional hand oiled or pressure systems, where oil is forced into a hole and distributed over the surface of the bearing by a groove in the shaft. This groove conventionally does not extend the entire length of the bearing, since the oil would soon flow out the open end of the groove and the bearing would tend to run dry. Consequently, the ends of the bearing do not receive sufficient lubrication and, therefore, begin to wear. After wearing, oil leaks from the ends of the bearings into the film compartment. Consequently, manual oiling has the two disadvantages of greater wear in the bearings which soon results in more oil in the film compartment.

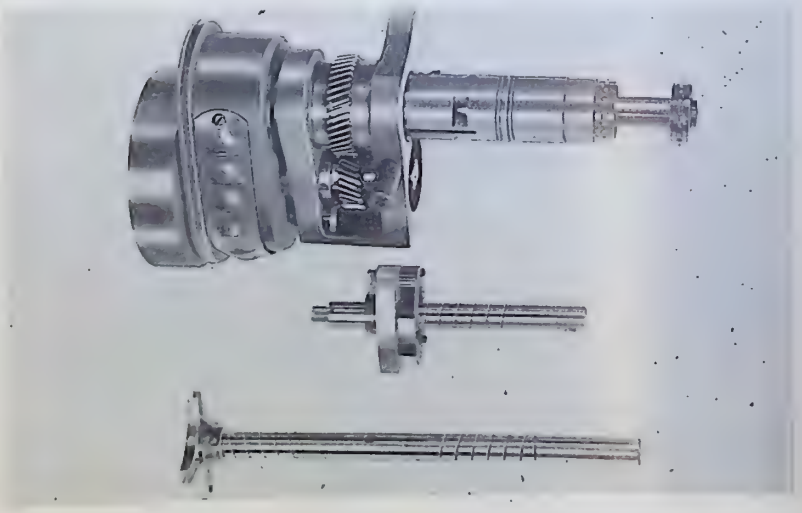
Intermittent and Gear Train

A second important point is the rugged heavy duty construction of the intermittent mechanism and the gear train. From earlier photographs you have had an opportunity to see how very substantial and durable is the complete gear train of any Brenkert projector.

In the Brenkert 60 projector all gears are of large diameter with a ⅜" wide gear face; the gear teeth are cut on an angle that will produce a minimum lateral thrust, reducing wear. Large diameter gears result in greater radial accuracy and, therefore, smoother and quieter operation. The wide gear face provides a greater contact area between meshing teeth, which results in a longer life for the gears. Steel gears are mated with phenolic gears wherever necessary to increase the life and reduce noise to a very low level. Large diameter, high-grade steel shafts and long bearings are used throughout, to maintain the original accuracy of gear alignment. The design features insure long life at low maintenance cost.

Figure 4 shows the standard Brenkert intermittent mechanism which is identically the same in both models of Brenkert projectors. High-quality bronze bushings manufactured with absolute precision are used for both the intermittent star wheel and cam shafts. Bronze bushings can be manufactured much more accurately and will last at least four times longer than a cast iron bearing of the same length and bore. The design of the Brenkert 60 projector mechanism lends itself to the use of bronze bearings in the intermittent unit, because of the abundance of oil flowing continuously over all its parts, thoroughly lubricating them and maintaining them at a low temperature. Without this type of lubrication, bronze bushings are not practical in an intermittent because the heat generated and held by the oil confined in the intermittent case would result in excessive expansion of the bronze bushings, which in turn would result in rapid wear and bind-ups.

FIGURE NO. 4



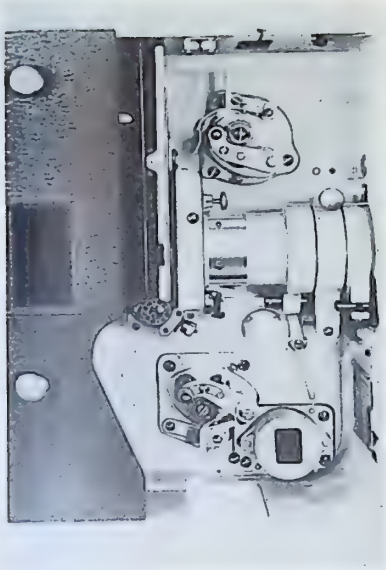


FIGURE NO. 6

The intermittent is often termed the "heart" of a projector. Brenkert intermittents are made with an accuracy of 1/10,000 of an inch. These precise dimensions are maintained in operation by generous bearing surfaces and automatic lubrication. Note the long double bearing of the sprocket shaft and the cam shaft; the hardened steel roller on the index pin; the generous size of the star and cam, presenting three to four times the bearing surface of any other intermittent. Brenkert precision is maintained by the micrometer adjustment provided for the star and cam relation. Any heat generated in the intermittent is carried away by the continuously circulating oil stream, thus providing a cool-running, trouble-free intermittent.

The heavy shaft with long, widely spaced bearings makes an outboard bearing on the intermittent sprocket shaft unnecessary. Consequently, the sprocket is removed for reversal or replacement by the simple loosening of one screw, and without the necessity of removing the intermittent from the projector head. This means quick and inexpensive sprocket replacement.

Removable Sub-Assemblies

A third important point common to all Brenkert projectors is that of separately removable sub-assemblies. Figure 5 shows on the left, the various sub-assemblies removed from the operating side of a Brenkert projector. The right hand side shows the corresponding sub-assemblies removed from the gear side. This type of construction insures quick and accurate servicing. All units are doweled to the main frame for correct and easy realignment of any part removed, thereby maintaining constantly the original accuracy built into the mechanism.

Operating Compartment

Figure 6 shows the operating compartment of the Brenkert 60 projector. The design and location of all components in the film compartment of the Brenkert 60 projector mechanism provide adequate space between all units to facilitate rapid and accurate threading of the film, and to simplify operational adjustments. The operating compartment is easy to keep clean. All assemblies can be removed separately and quickly for servicing.

All sprockets are hardened and then precision ground for smooth, quiet and accurate running of all kinds of 35mm motion picture film. The intermittent sprocket, as well as the upper and lower feed sprockets, can be replaced in less than two minutes by removing one screw and sliding the sprocket off its shaft. All these sprockets can easily be reversed, which doubles their useful life.

Film Trap and Film Gate

Figure 7 shows the film trap and film gate. The film trap is constructed on a heavy, one-piece casting, especially heat-treated to prevent warping. It is easily removed for cleaning and inspection; and replacement can be made quickly and accurately, because the entire unit is doweled to the main frame to insure perfect alignment with the intermittent sprocket and the optical axis. The film is guided the full length of the film trap, to prevent film side sway. The film tracks and the film guides are made of highly polished steel, hardened and precision ground.

A framing aperture is built into the film trap exactly five picture frames above the picture aperture. This framing aperture facilitates accurate and rapid threading of the film, especially when the mechanism is tilted for a large projection angle.

The film gate is mounted on an accurately ground sub-base and moves on two large diameter guide shafts, one at the top and one at the bottom of the gate, thereby holding the film gate in accurate alignment with the aperture at all times. The gate opening is adequate to provide plenty of room when threading the film in the mechanism and for inspecting the film trap shoes and gate pressure pads.

Two sets of hardened, polished steel pressure pads are provided on the film gate to insure absolutely steady motion of the film through the film gate, and to hold the film firmly and accurately against the aperture plate when the picture is being projected.

The gate can be removed quickly and easily for inspection and cleaning by simply loosening one screw.

Framing

The framing knob on the Brenkert 60 mechanism is located at the front of the projector, directly below the lens mount, where it is easily accessible from either side of the projector mechanism.

Framing the picture at the aperture is accomplished by rotating the intermittent sprocket around its shaft so that the sprocket is always in its same relative position with respect to the picture aperture, regardless of the position of the framing knob. This is the most

FIGURE NO. 5

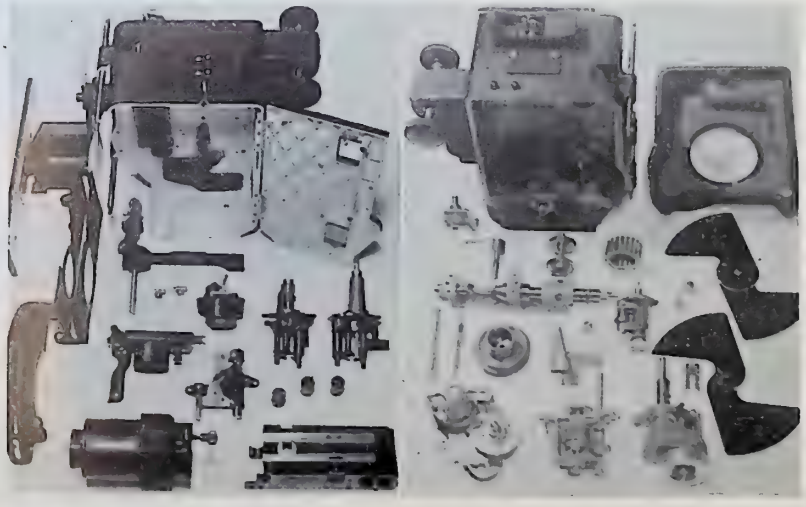
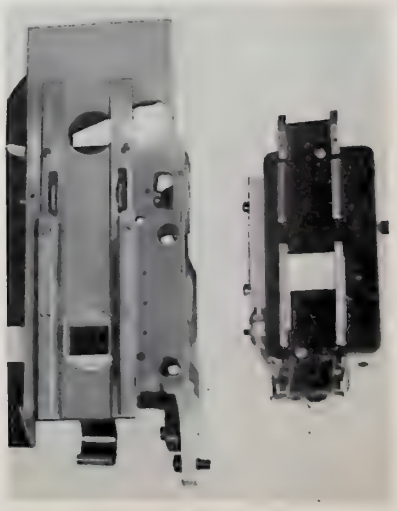


FIGURE NO. 7



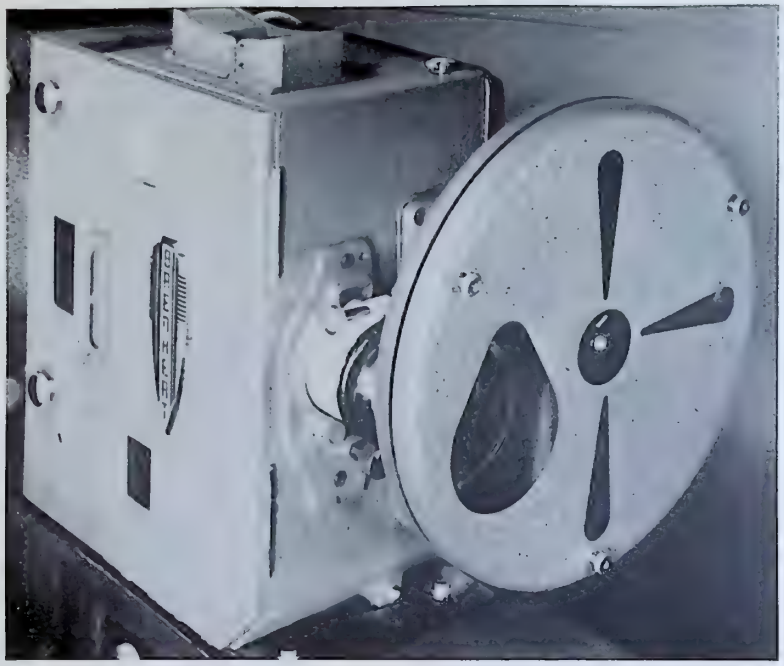


FIGURE NO. 8

desirable method to use for framing, because the film is always supported by the film trap and gate shoes directly to the sprocket, eliminating any possibility of film flapping, which would cause unsteady projection.

Lens Mounting

The projector lens mount is designed to accommodate all standard makes of projection lenses, as well as lens adapters used with series I and II projection lenses. The lens is held rigidly and firmly in both the front and the rear of the lens mount, so that the projection lens is always maintained in perfect optical alignment. The projection lens is easily removed for cleaning by simply loosening two knurled thumbscrews.

A focusing knob on the front of the lens mount is easily accessible for adjustment from both sides of the projector.

Light Shutters

Figure 8 shows the double shutter Brenkert 60. The Brenkert 60 projector mechanism is available with either one rear or one rear and one front shutter.

The chief advantage of using two light shutters instead of one is that approximately 20% more light is transmitted to the screen when two light shutters are used. Light flicker is also reduced to a minimum and picture definition is improved.

The rear light shutter on the Brenkert 60 mechanism is designed to provide adequate cooling of the film aperture.

Adjustments for increasing the width of the shutter blades are not necessary in this projector because of the large-size gears used for driving the shutters and because these gears are automatically and continuously lubricated. Wear, therefore, is negligible even after long periods of operation, so that back-lash between the shutter drive gears does not develop.

It is extremely easy to time the shutters on the Brenkert 60 mechanism. This adjustment can be made accurately without the use of any special tools. Vernier changes in the adjustment of the shutters can be made with the machine in operation, by means of a micrometer adjusting screw located conveniently at the screen end of the projector.

SMPE Standards

The performance of all Brenkert projectors is within the published limits for projection standards established by the Society of Motion Picture Engineers.

THE FILM PRAYER

I am celluloid, not steel; O God of the machine, have mercy. I front dangers whenever I travel the whirring wheels of the mechanism. Over the sprocket wheels, held tight by the idlers, I am forced by the motor's might. If a careless hand misthreads me, I have no alternative but to go to my death. If the pull on the take-up reel is too violent, I am torn to shreds. If dirt collects in the aperture, my film of beauty is streaked and marred, and I must face my beholders—a thing ashamed and bespoiled. Please, if I break, don't attempt to fasten me together with pins or clips; simply stop the machine, and overlap the ends around the take-up reel—a sufficient distance to hold—then proceed with the showing. Don't rewind me unless necessary—my owner wants the privilege, so that he may examine me, heal my wounds, and send me rejuvenated upon a fresh mission.

I travel many miles in tin cans. I am tossed on heavy trucks, sideways and upside down. Please see that the paper band is wrapped snugly around me on the reel and fastened with a string, so that my first few coils do not slip loose in my shipping case, and become bruised and wounded beyond the power to heal. Put me in my own can. Scrape off all old labels on my shipping case so I will not go astray.

Speed me on my way. Others are waiting to see me. The next day is the last day I should be held. Have a heart for the other fellow who is waiting, and for my owner who will get the blame.

I am a delicate ribbon of film—misuse me and I disappoint thousands; cherish me, and I delight and instruct the world.

From "Motion Pictures for Instruction" By A. P. Hollis, DeVry Corporation, Chicago

A Light Duty and Portable 35mm. Sound Projector

The Post-War Return of a Quality Product to Serve Small Theatres, School Auditoria or Industrial Uses

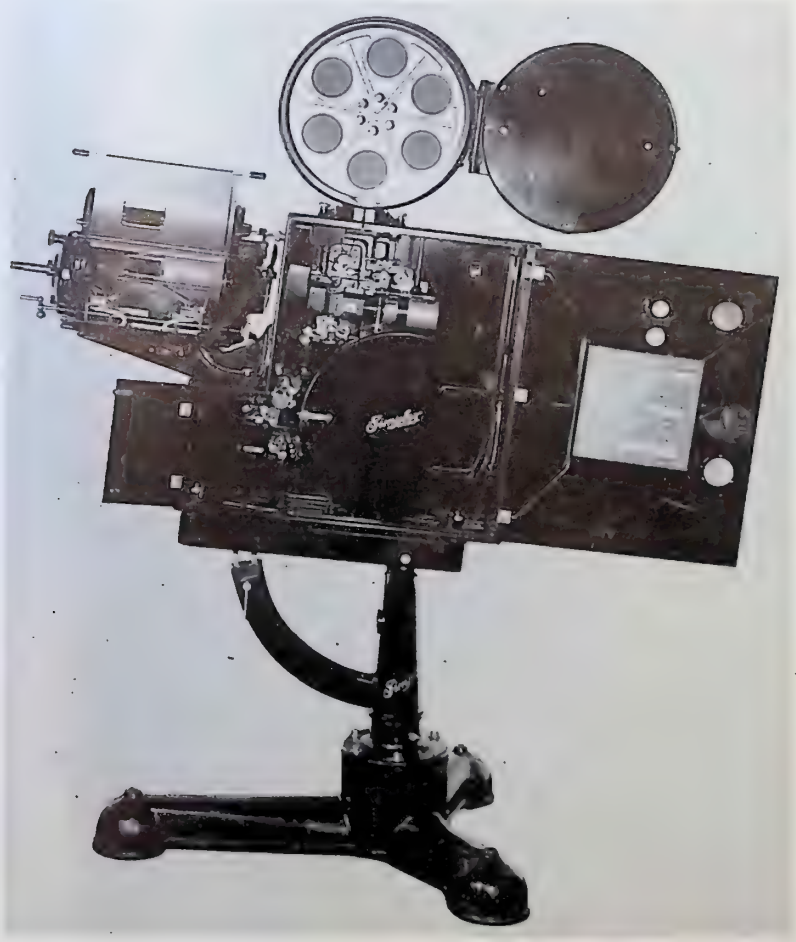
Projection equipment for small theatres and for industrial and institutional usage represents a tributary but important branch of the motion picture theatre equipment industry. One outstanding product in this specialized field—the Simplex Sound Projector Type "SP"—is not new in the contemporary sense of the word but it has been out of circulation for some years due to the war, and may, therefore, be unknown to many industrialists, educators, and small theatre owners now actively engaged in projection on a medium or small scale. Others who could probably use such equipment to good advantage may have forgotten it during its dormant period. For these reasons, THEATRE CATALOG is presenting detailed data on this special projection equipment for the purpose of acquainting the trade with its engineering, parts, advantages and even its limitations.

The Projector

The Simplex "SP" was designed and constructed for use in smaller theatres and auditoria where the seating capacity does not exceed 800, and the daily program is more frequently of an intermittent nature than a continuous, unremitting grind of 14 to 20 hours a day. Although built for a less strenuous life than its big brothers—the famous Simplex E-7 and Super-Simplex Projectors—the Simplex "SP" incorporates many of the features of the heavy-duty models.

In actual performance, the Simplex "SP" gives highly satisfactory results. It delivers to the screen pictures that are brilliant and without vibration; and recreates with excellent fidelity the sound produced by Hollywood.

The Simplex Sound Projector Type "SP" has been designed primarily for small auditoria and intermittent rather than continuous 35 mm. usage. For this reason it is ideal projection equipment for the smaller theatre, industrial and institutional work. The mechanism is described in this article and its main component parts analyzed. In addition, related equipment is mentioned. The purpose of this entire survey is to re-alert veteran readers to its post-war return to the 35 mm. equipment field; as well as to introduce it to many newer industryites with no prior acquaintance.



Economically, the projector is inexpensive to maintain and is designed to stand up well under all kinds of treatment. The manufacturer claims that it will give fine dependable service at all times. Structurally, the mechanism is well designed, being housed along with the sound unit and lower magazine in a handsome, compact case of durable masonite. Panels are easily removed for effective access to all parts of the mechanism.

Three Types of Lamps Available

For small auditoria, of limited seating capacity, or where the utmost simplicity of operation is required, illumination by Mazda lamp may be desirable. Duplex construction (One metal lamphouse within another) provides for passage of air from ventilating fan in the projector. This extremely efficient cooling system with motor-driven fan permits the use of either a 1000 or 1500 watt 105-120 volt pre-focused lamp. Model is equipped with Mogul prefocus socket for T-20 lamp, B & L reflector, Fresnal condensing lens, and switches for sound and picture changeover.

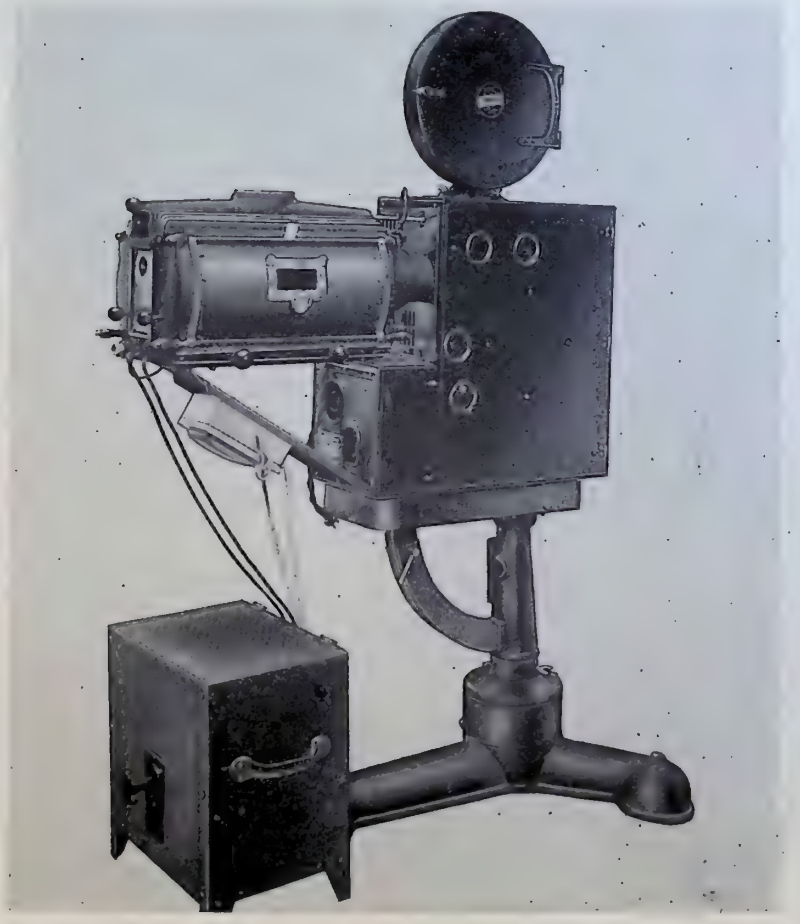
A low intensity reflector arc lamp, designed to project a picture of a size and brilliancy comparable with any of the larger projectors equipped with low intensity arcs, is also available. Carbons are fed automatically and continuously so that a uniform arc gap is secured without manual control. The lamp can be operated from 15 to 21 amperes at 55 volts DC. 7 mm. negative and 10 mm. positive 8" long carbons are used. Model has a mercoid sound changeover switch on dowser and other modern improvements which are similar to those used on larger and more costly equipment.

LEFT, with low intensity reflector arc light source.

A new lamp has now been introduced to operate with the Simplex "SP" projector—a 40-ampere Junior-High lamp which will produce a snow white light and will project a screen image comparable with that produced by any of the standard 40 ampere simplified high intensity type lamps. The light volume is sufficient to project a satisfactory picture up to 18 feet in width. The lamp weighs only 50 pounds and measures 23"x13"x13", burns a 6 mm. by 9" negative and a 7 mm. by 12" copper-coated positive. In round figures it projects 2000 lumens of light. On the other hand, the low intensity lamp projects 1000 lumens, and the Mazda, 600 lumens.

The Simplex "SP" has many important features: 1. An automatic fire shutter—governor control operated—has a second film loop trip. Fire possibility is therefore minimized. 2. Construction of the film trap and gate not only serves to eliminate buckling of film, but actually straightens it out at the aperture during projection, thereby giving a clearer and steadier picture. 3. Convenient lateral adjustment of film insures proper location of sound track at all times. 4. Take-up sprocket eliminates uneven film pull on sound sprocket by means of a loop between the sound and take-up sprocket. 5. Capacitor driving motor requiring small starting current, provides satisfactory operation on ordinary house lighting circuit. 6. Revolving cut-off shutter is entirely enclosed. This is similar to that used in the finest modern professional equipment. It is claimed that it reduces heat upon the film at least 50%, improves projection, increases life of the film, and reduces repair and replacement of parts. 7. Through an accurately machined curved sound aperture plate which keeps film in perfect optical plane with relation to the sound reproducing optical system, the highest professional sound reproduction is secured. This aperture plate also prevents gathering of emulsion on film at this point, and the weaving of the film in passing through the reproducing light beam. 8. Photoelectric cell is mounted directly behind the sound aperture plate and, with the exception of a small window to allow passage of light from the optical system, is completely enveloped by a shield. 9. Adjustable take-up provides even tension of film for all size reel hubs. 10. An advanced scientific lubrication system prevents over-oiling or danger of having bearings bind. Through manifolds, oil is led to porous type bronze bearings, where it is absorbed and then fed to the shafts as required. 11. Gyroscopic filter assures proper control of film speed at the scanning point. 12. Bakelite micarta gears paired with steel gears are designed to give longer life and reduce noise.

WITH SIMPLIFIED HIGH INTENSITY arc light and accompanying rectifier it is a modern sound projector.



Amplifier

The Simplex NP-30 Amplifier, for use with the Simplex "SP", operates on 105-130 volts, 50-60 cycles. It is claimed to provide a readily adjustable frequency response; and is equipped with sound-on-film or phonograph gain control, high or low frequency control, on-and-off switch, and pilot light. The top cover of the amplifier has been designed for drip-proof operation. Internal components are hermetically sealed—"bath-tub" condensers, electrolytics in metal cans, metal clad transformers. This type of construction is said to insure long life and minimum maintenance in all climates.

Pedestal

A pedestal has been designed for the Simplex "SP" providing a rugged and substantial base. The column of the base can be easily rotated right or left; while tilting the table from a horizontal position to an angle of 30 degrees is easily accomplished through a quadrant provided with a locking handle. The purpose of this is to permit convenient adjustment for any angle of projection.

Portable Stand

Where the Simplex "SP" is primarily required for portable operation, a simplified aluminum stand with collapsible legs is available.

Sound Equipment

For sound reproduction, the following equipment is available: an electrodynamic loudspeaker designed for the reproduction of the highest quality sound on film. This speaker has a 12 inch cone and a power handling capacity of over 20 watts. For use with the speaker is a 41 inch non-directional theatre type baffle, which is said to produce an even distribution of sound throughout the auditorium. For portable operation an attractive leather carrying case baffle is available.

For Permanent Installations

Professional amplifier and loud speaker equipment for permanent installations is also supplied. Principal items now available include: a volume control amplifier supplied with extension volume control arm for operation at both projector positions; a main amplifier and power unit, including individual monitor amplifier which allows full power output to stage loudspeakers. This unit is mounted in a unique cabinet which provides immediate accessibility for inspection and servicing. For effective sound distribution, a two-way loudspeaker system is recommended. This is provided with a genuine multicellular high frequency horn and a streamlined drawing unit set on a folded exponential low frequency baffle.

The Simplex Type "SP" is back on the production line!

National

TRADE-MARK



PROJECTOR CARBONS

FOR EVERY TYPE OF PROJECTION LAMP

Sold through Authorized Distributors

SCREEN LIGHT AVAILABLE FROM HIGH INTENSITY PROJECTION LAMPS*

Type of Lamp	Type of Carbon	Size	Maximum Recommended Arc Current Amperes	Arc Volts	Maximum Screen Lumens 90° Shutter	Maximum Screen Width with 9 Ft. Lamberts at Center— 75% Screen Reflectivity
Condenser Type	High Intensity, White Flame Positive "Orotip" Cored Negative	13.6 mm x 22 in. ½ x 9 in.	150	78	9750	38.2
	Super High Intensity, White Flame Pos. Heavy Duty "Orotip"	13.6 mm x 22 in. ½ x 9 in.	170	75	10750	40.5
Simplified High Intensity	Suprex Cored Positive Suprex Cored Negative	7 mm x 12 or 14 in. 6 mm x 9 in.	50	37	5000	27.2
	Suprex Cored Positive Suprex Cored Negative	8 mm x 12 or 14 in. 7 mm x 9 in.	70	40	7000	31.6
"One Kilowatt D.C. Arc"	Suprex Cored Positive "Orotip" C. Negative	7 mm x 12 or 14 in. 6 mm x 9 in.	40	27.5	3250	21.9

**(All data based on use of F/2.0 treated projection lenses)*

The terms "National" and "Orotip" are trade-marks of National Carbon Company, Inc.

NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

UCC

30 East 42nd Street, New York 17, N. Y.

DIVISION SALES OFFICES

Atlanta—Chicago—Dallas—Kansas City—New York

Pittsburgh—San Francisco

HIGH INTENSITY PROJECTION

The history of screen lighting, even from the beginning, has been one move after another to obtain more and better light. High intensity projection has always produced enthusiastic response from theatre patrons, since they notice and show favorable reaction to the improvement resulting from installation of this type equipment.

High intensity lamps provide a greater volume of screen light than the older low intensity lamps. This allows a clear cut screen image to be shown in the presence of a safe and comfortable level of general illumination. Patrons entering the auditorium from the lobby find their seats without discomfort or embarrassment, while the lighter contrast between the screen and surrounding illumination adds to visual comfort in viewing the picture.

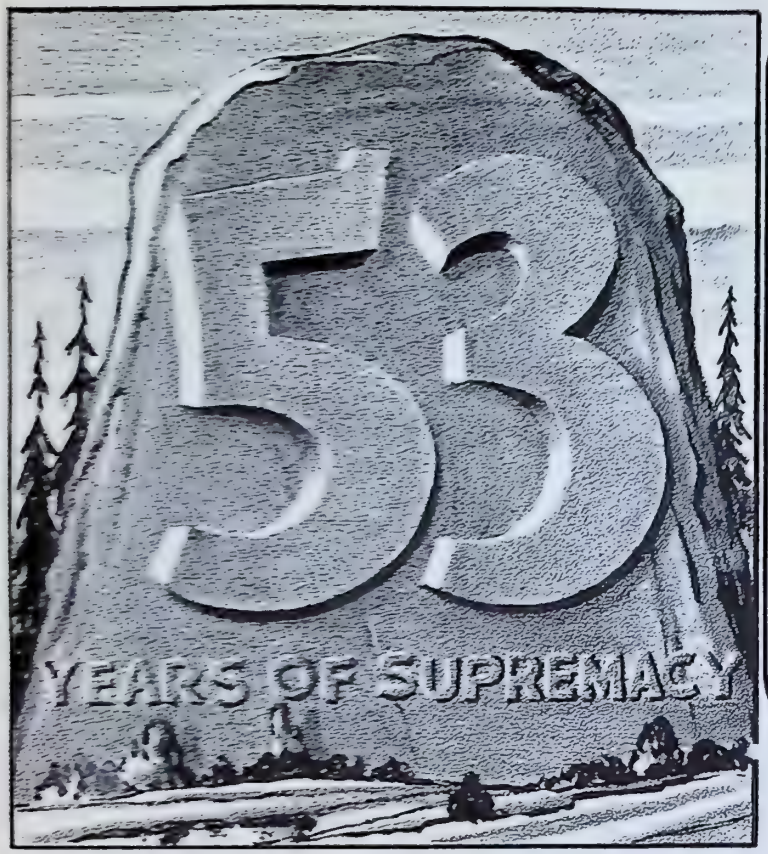
A further advantage of the high intensity arc for projection is the snow white quality of its light. Light from the low intensity arc is comparatively dull and yellowish. This distorts the hues of color features and detracts from the impression of realism which color is designed to create. High intensity projection reproduces all colors with great fidelity and gives a realistic quality to color features not otherwise obtained.

"ONE KILOWATT" ARCS

From the standpoint of the small theatre, the "One Kilowatt," carbon arc ranks among the most important advances in the art of motion picture projection. It enables the smallest theatre, at little or no increase in operating cost, to have the advantages of snow white projection light and the recommended level of illumination on the screen. It removes the edge enjoyed by those theatres having the more expensive types of high intensity lamps.

One of the most important objectives in preparing for future business is improvement in the quality and quantity of screen illumination, especially since increased production in color films is expected. No theatre will be a modern theatre without high intensity projection.

The "One Kilowatt" arc, without increasing operating cost, now allows the small theatre to give its patrons 50 to 80 per cent more screen light, more realistic color reproduction, and a quality of picture presentation unsurpassed by any theatre, regardless of size.



FOR *Beautiful*
ROCK-STEADY PROJECTION
FOR LONG, TROUBLE FREE SERVICE

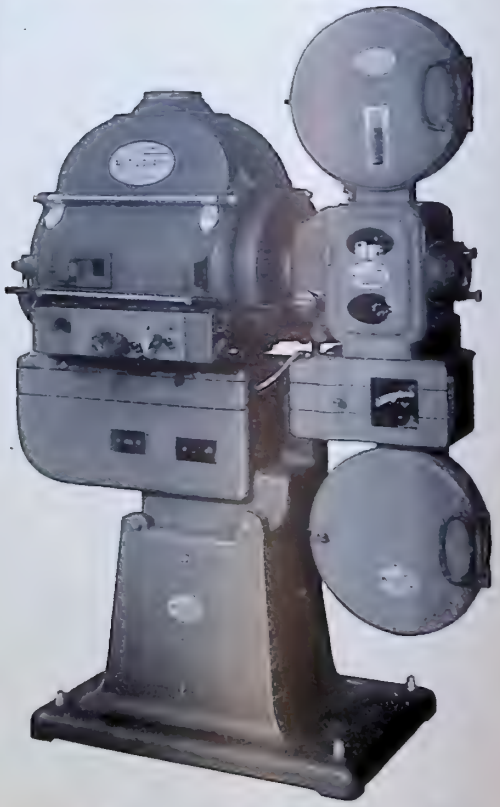
MOTIOGRAPH

PROJECTORS

The finest projection costs less over the years when you install Motiograph—the projector designed and built by specialists.

Model AA Motiograph mechanism on Model AA pedestal with Motiograph 75/115 ampere high intensity arc lamp, Model AA magazines and Motiograph SH-7500 sound reproducers.

For literature and complete information write

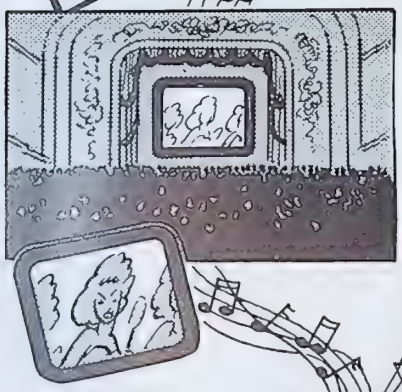


MOTIOGRAPH, INC., 4431 W. LAKE ST., CHICAGO 24, ILL.
EXPORT DEPT.: FRAZAR & HANSEN, LTD., 301 CLAY ST., SAN FRANCISCO 11, CALIFORNIA

HIGH QUALITY SOUND REPRODUCTION for EVERY THEATRE INDOOR & OUTDOOR!



MOTIOGRAPH



SOUND SYSTEMS

Motiograph offers two basic sound systems—the 20 watt Model M-9-B and the 40 watt M-911 Dual, for theatres of 1,000 and 2,000 seats. The power output of these basic systems may be brought up to serve theatres up to 6,000 seats by the addition of one or more power amplifiers.

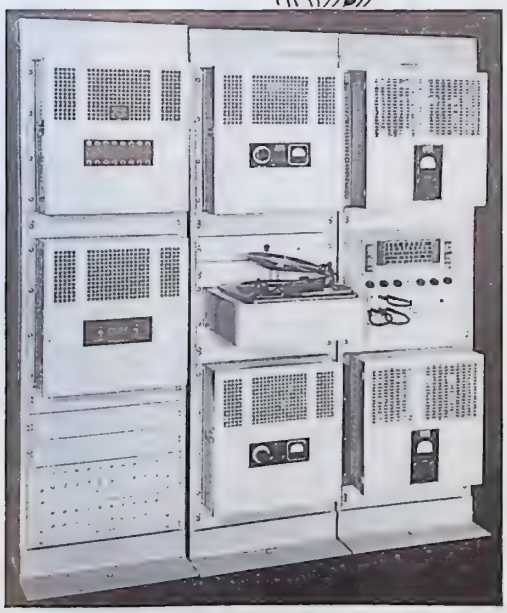
Motiograph also offers sound systems for drive-ins including in-car speaker systems with power output of 100, 150, 250 and 500 watts, the largest of which will serve more than 1000 cars, and has emergency provision permitting operation at 50, 250 or 500 watts. Central loudspeaker systems with power output of 75 and 150 watts also are available.

With your choice of any model Altec-Lansing "Voice of the Theatre" or Motiograph loudspeaker equipment, Model M-9-B is available with five sizes of loudspeaker systems and Model M-911 Dual with three sizes, while there is choice of three large loudspeaker systems in the higher powered sound system models.

The Motiograph SH-7500 sound reproducer is based on designs of Electrical Research Products Division of Western Electric Company.

Main amplifiers are all power-rated at two per cent distortion. First quality sound reproducers and D.C. excitation are offered in every model. In all dual models two or more main amplifiers are furnished, so that in an emergency sufficient amplifier power is available. Switching panels are furnished to afford facilities for operating either amplifier alone.

Motiograph sound systems have been designed for quick, easy servicing in the field.



Motiograph Sound Equipment Panels for large Drive-in Theatres. On Left (Top) is SE-7555 Switching Panel, Controlling Ramp Sound Feed and Lighting Feed Circuits, (Middle) SE-7520 Power Unit, (Below) Two SE-7558 Ramp Switching Panels. Center panel contains Two 25 Watt MA-7505A Driving Amplifiers (Above and Below), with Motiograph built Turntable designed both for new Long Playing and other types of Records. On Right are Two 250 Watt Power Amplifiers (Above and Below) each with sufficient power for 1,000 In-Car Speakers, with AM and FM Radio for incidental music.

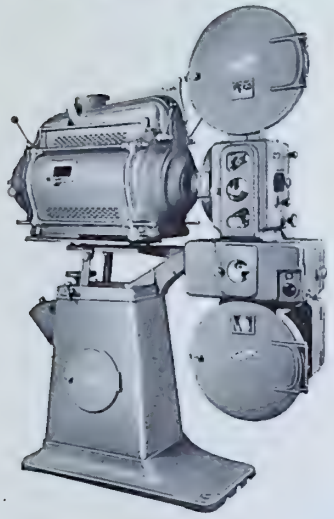
For literature and complete information write

MOTIOGRAPH, INC., 4431 W. LAKE ST., CHICAGO 24, ILL.

EXPORT DEPT.: FRAZAR & HANSEN, LTD., 301 CLAY ST., SAN FRANCISCO 11, CALIFORNIA

Century PROJECTION AND SOUND SYSTEMS

CENTURY MODERN PROJECTORS



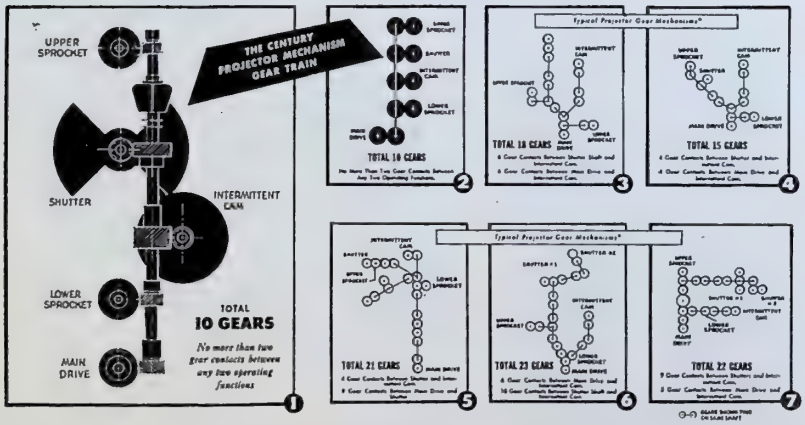
Are you looking for a projector that offers more to you and your patrons than any other? Then consider; CENTURY'S double and single rear shutter mechanisms give you maximum screen illumination with safe film temperature. Air cooled multiple heat baffles effectively control lamp heat thus eliminating light-wasting glass filters. Proof of CENTURY'S high optical efficiency can be seen in the following ratings:

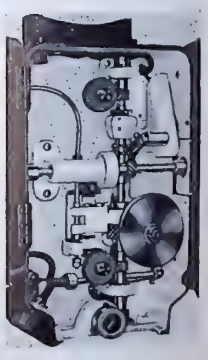
Model C (using f2.0 optics) 50 percent efficient
(using f3.5 optics) 54.5 percent efficient
Model CC (using f2.0 optics) 60 percent efficient

With CENTURY you will have no lubrication headaches—no dripping oil or grease to mess up equipment or film. There are no oil baths or oil pumps to leak or to fail and cause bindups and frozen bearings. To put an end to this costly trouble CENTURY uses frictionless bearings and glass-hard, high carbon-chrome steel gears.

CENTURY projectors are the cleanest, simplest, sturdiest made. They operate to such a degree of perfection that regardless of the length of throw or the size of the screen, the picture is clearer, sharper, and more steady than previously thought possible.

Proof of CENTURY'S simplified, high-efficiency design





Note the straightforward gear and shaft arrangement —everything easy to get at and maintain

These diagrams show schematically the gear arrangements of six well known projector mechanisms. Figures 1 and 2 show the simple, direct design of the CENTURY mechanisms. Ten gears with only two gear meshes between the shutter and the intermittent cam. It's easy to see why they operate with extra high efficiency. Other types (Figs. 3 to 7) have from four to 12 such meshes and up to 23 gears.

Fewer gears mean less trouble, lower maintenance, higher efficiency, sharper pictures . . . finer projection.

Distributed in U.S.—AUTHORIZED THEATRE SUPPLY DEALERS in Canada—DOMINION SOUND EQUIPMENTS, Ltd.
in foreign countries—WESTREX, Inc.

See your CENTURY dealer or write:

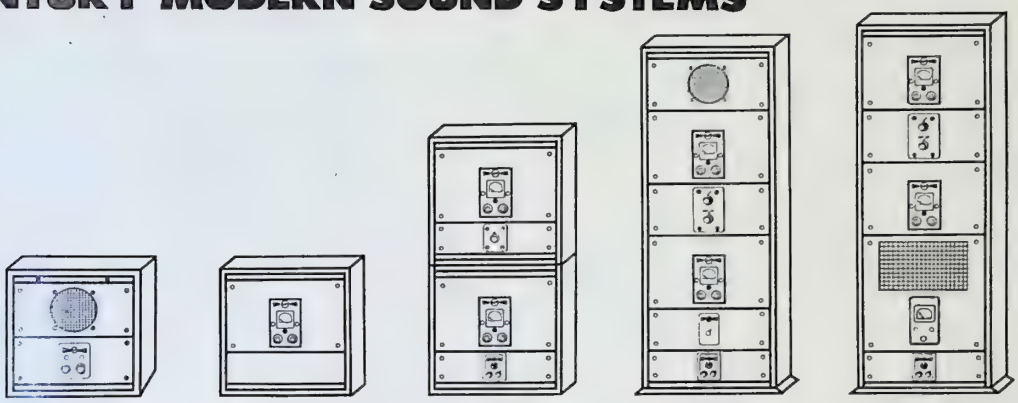
CENTURY PROJECTOR CORPORATION

NEW YORK, N. Y.

Century PROJECTION AND SOUND SYSTEMS

How to plan the proper Sound System for your theatre

CENTURY MODERN SOUND SYSTEMS



15 WATT SINGLE CHANNEL | 18 WATT SINGLE CHANNEL | 18 WATT DUAL CHANNEL | 40-80 WATT DUAL CHANNEL | 250-500 WATT DUAL CHANNEL

With no obligation on your part CENTURY'S experts will help plan a sound system that will fit your needs — present and future. Because CENTURY equipment is designed on the unit principle each installation can be custom made to meet the physical or financial requirements of any theatre or drive-in. CENTURY Sound Systems are obtainable in single or dual channel and in power ratings from 15 to 1000 watts or higher. They include all operating features *plus* the flexibility to accommodate expansion and future modernization demands. Hollywood production advances will never outmode CENTURY Sound Systems.

And here is a new remarkable improvement!

ACADEMY AWARD WINNER . . .

Flutter Suppressor wins Academy Award for "fundamental improvement in film drive."

The Academy of Motion Picture Arts & Sciences recognized the value of the flutter suppressor in making its 1947 Award to C. C. Davis of the Western Electric Co.

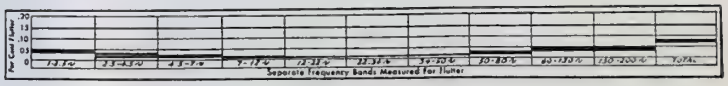
This Flutter Suppressor is available on CENTURY equipment NOW!

Improve the performance quality in your theatre by using this outstanding Award-winning development.

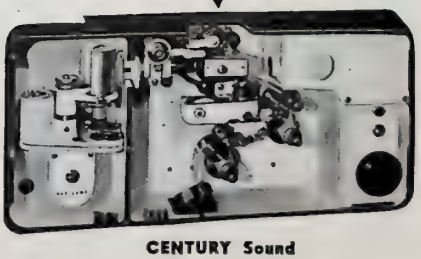


The Award-winning Hydro Flutter Suppressor as used in the new CENTURY sound reproducer

The new Hydro Flutter Suppressor does this for you:



Flutter chart showing the low flutter obtainable with CENTURY Sound Reproducers — *less than half* the amount set as acceptable by the Academy of Motion Picture Arts & Sciences. This means faithful, high quality sound in your theatre . . . the best in motion picture presentation.



CENTURY Sound Reproducer

See your CENTURY dealer or write:

CENTURY PROJECTOR CORPORATION

NEW YORK, N. Y.

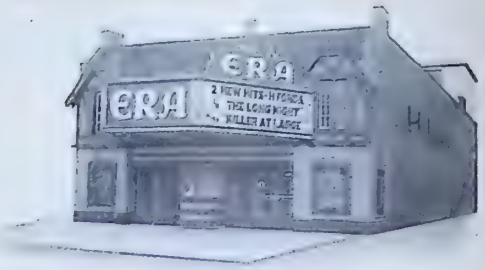
For the Perfect Show Indoors or Out — Your Best Buy is a DeVRY

METROPOLITAN THEATRES • • • • NEIGHBORHOOD THEATRES

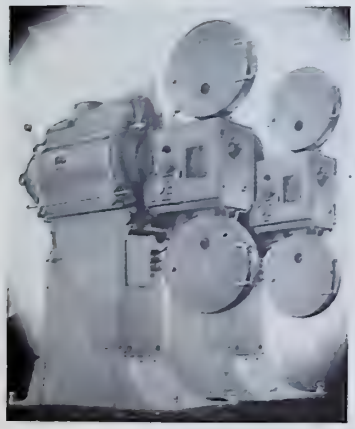


Pictured (left) is the palatial Mexican *Teatro Juarez*, one of the world's finer theatres using DeVry "12000 Series" theatre equipment to faithfully present the producer's finest.

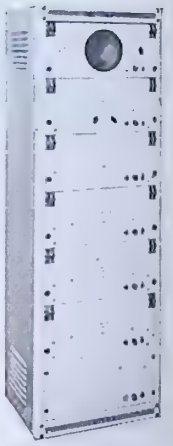
DeVry "12000 Series" projectors and amplifiers are building audience satisfaction in small theatres, too, such as the 250-seat *New Era* movie house at Harvey, Illinois.



EVERYTHING FOR DRIVE-IN THEATRES



For a bigger box office "take," follow the lead of other Exhibitors, operating 250- to 6,000-seat theatres, up to 1,000-car capacity "drive-ins," and switch to the sensational DeVry "12000 Series" theatre projectors and amplifiers. See the "12000 Series" at the Authorized Theatre Dealer as listed in the Dealer Directory, or see actual installation nearest you. DeVry's *"12000 Series" is listed under Re-examination Service of Underwriters Laboratories, Inc.*

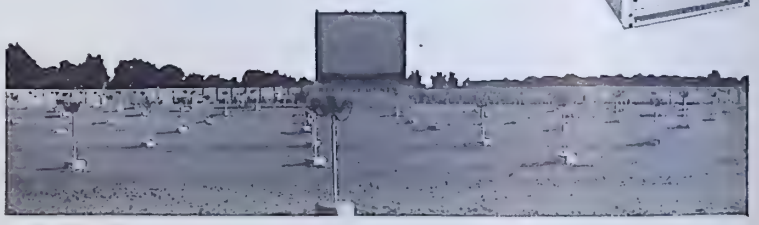


DeVry "12000 Series" Projectors (left) with sound head and picture mechanism in one complete unit . . . with patented silent chain drive . . . with war-proved rotary sound-stabilizer and a host of other mechanical, optical and audio refinements, are now being installed in the world's finer theatres.

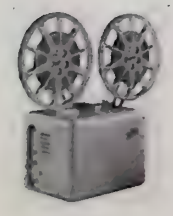
DeVry Low-Distortion Amplifiers (right) are perfectly matched with DeVry built-in sound heads and speaker systems. They incorporate all latest proven developments essential to highest quality, true-to-life reproduction. Built on individual unit-service plan.



DeVry In-Car Speakers include every advancement in acoustical design, mechanics and electronics. War perfected 5-inch Alnico V P.M. Speaker Units . . . Weather- and insect-proof Lustrous Hammerloid finish . . . Individual volume control . . . High tensile aluminum alloy construction . . . Speaker cones "treated" to resist weather . . . Terminal mounts to either 1½" or 2" posts.



DeVry "SUPER 16" — THE LIGHTWEIGHT 16MM. PROJECTOR THAT OUT-PERFORMED THEM ALL!



DeVry's completely new "Super 16" by metered test, out-performed the field for brightest, clearest pictures . . . out-performed the field for truest-to-life sound!

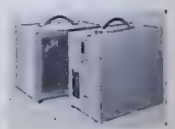
DeVry's "Super 16" reflects advanced engineering in (1) design, (2) materials, (3) performance. The smartest looking, smoothest performing projector EVER.

DeVry "THEATRE-IN-A-SUITCASE LOW-PRICED, LIGHTWEIGHT 16MM. SOUND-SILENT PROJECTOR.

For personal use or for church, school, banquet room, conference room or living room, your best buy is the DeVry 16mm. "Theatre-in-a-Suitcase." Projector, amplifier, speaker and screen, all-in-one small, compact case with less than 28 pounds pick-up (operating) weight. Underwriter Approved.



DUAL CASE version of "THEATRE-IN-A-SUITCASE," gives you projector and amplifier in one case, 8" Alnico V permanent magnet speaker in matching case.



In Canada contact Arrow Films, Ltd., 1115 Bay Street, Toronto 5, Ontario.

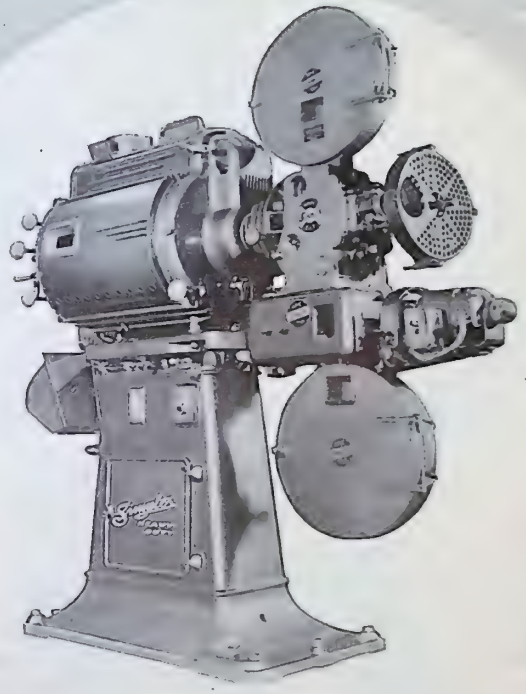
Only 5-time winner of Army-Navy "E" award for motion picture sound equipment.

DeVRY CORPORATION, 1111 ARMITAGE AVE., CHICAGO 14, U. S. A.

Simplex

T. M. REG. U. S. PAT. OFF.

THE INTERNATIONAL PROJECTOR



● The Simplex Mechanism is the latest development in projector mechanisms, so designed as to give a steadier image, cleaner picture and a more brilliantly lighted one. A far greater period of peak performance is assured with Simplex. Many improved operating characteristics and operating conveniences have been incorporated and result in important benefits to sound and picture. Simplex Mechanism design eliminates many small detail duties of the projectionist and leaves him more time to effect perfect screen presentation. Simplex has proved a definitely profitable investment from the standpoint of better entertainment, pleased patrons, increased box office receipts, greater dependability and reduction of maintenance costs.

THE FIRST CHOICE OF LEADING EXHIBITORS THE WORLD OVER

Manufactured by INTERNATIONAL PROJECTOR CORPORATION • 55 La France Avenue • Bloomfield, N. J.

Distributed by

A UNIT OF NATIONAL STANDARD PROJECTION SYSTEM

NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc

Wenzel LEADS AGAIN!

★ **The Wenzel "ACE" Pro-4 Mechanism**

★ **The BW-600 *New* Base**

★ **The *New* 18" Pro-31 and Pro-32 Magazines**

★ **The *New* WS-3 Sound Head with Front Belt Drive**

Lamp House by others

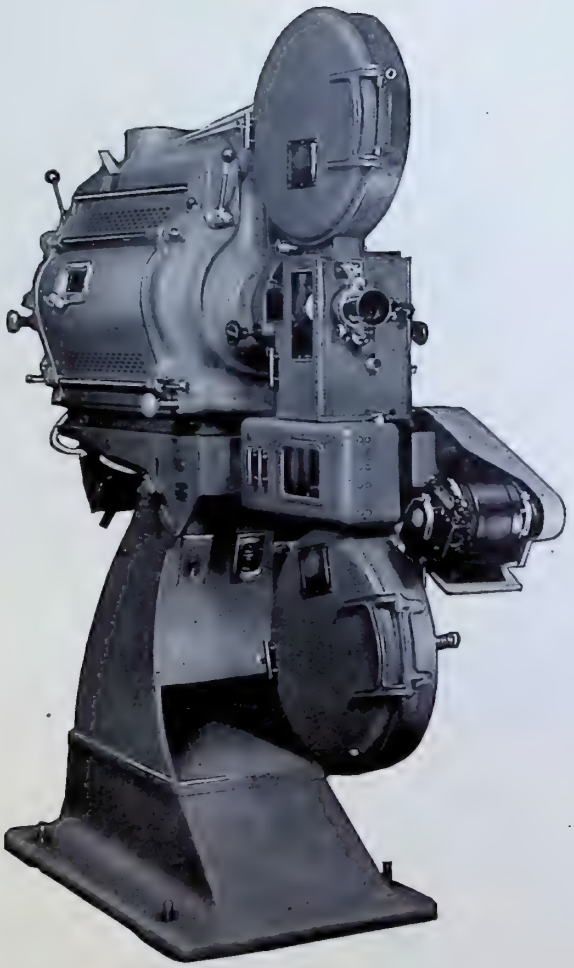
The *new* Pro-31 and Pro-32 Magazines have ¼" more depth between the reel and rear wall. The bearing surfaces on both upper and lower shafts are ½" in diameter. The upper shaft runs in an oilite bearing. New spring tensions have been developed. Both the Pro-31 upper and Pro-32 lower 18" *new* type magazines and the Pro-21 upper and Pro-22 lower 18" standard type magazines have the well-known Wenzel beaded edge covers.

The 16" upper magazine Pro-11 and the 16" lower magazine Pro-12 are still in production. These magazines have a flat cover. The Pro-41 24" upper magazines and the Pro-42 24" lower magazines have the beaded edge covers and are very much in demand in foreign countries.

The outstanding features of the Pro-4 mechanisms are more fully described and illustrated in our brochure WC-19, which will be sent free on request.

•

We are actively represented all over the world. Equipment sold only through Independent Theatre Supply Dealers



The interior of the *new* Sound Head has been simplified and contains all necessary adjustment features. Two belts are used to drive the sound head, and the motor table is connected directly to the sound head main frame. No special tables needed for any type of base. Can be used on 50 or 60 cycle current since the speed can be controlled by the size of the motor pulley. Belts can be tightened by sliding motor down on motor table.

The *new* BW-600 Base has a 25 degree uptilt and a 28 degree downtilt. The base is vibration-proof. The design of the base is such that the upper magazine at the extreme uptilt is easily accessible.

We manufacture Precision Replacement Parts for many types of projectors. Our hand and electric driven rewinds are in use in thousands of theatres. We also manufacture many booth accessories.

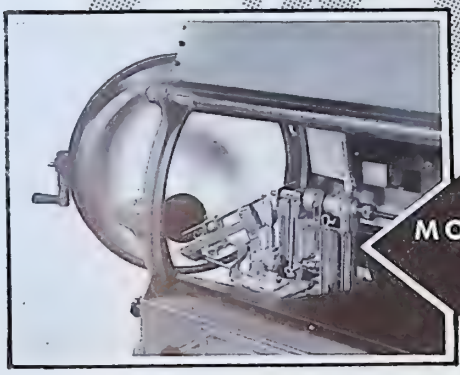
•

Free Literature Available On Complete Line of Equipment Write for it TODAY!

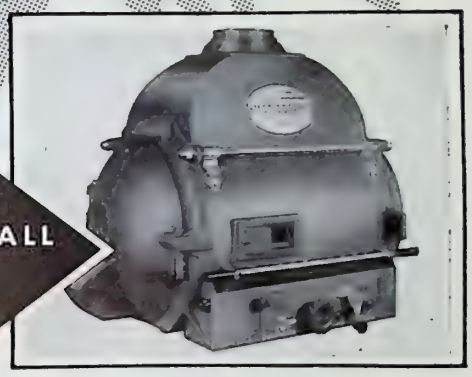
WENZEL PROJECTOR COMPANY

2505-19 SOUTH STATE STREET • CHICAGO 16, ILLINOIS, U.S.A. • CABLE: WENZKO

HERE'S THE INCREASED LIGHT *YOU'VE WANTED FOR* DRIVE-IN & LARGE INDOOR SCREENS



THE NEW MOTIOGRAPH-HALL 75/115 AMPERE HIGH INTENSITY REFLECTOR TYPE ARC LAMP



Operating at 85 amperes, the Motiograph-Hall produces 19,000 lumens—more light than condenser-type high intensity lamps operating at more than twice this amperage.

Precise positioning of the carbons with respect to each other holds the gases within the crater where they become superheated to extreme brilliancy. A rotating positive carbon (the only reflector-type lamp with this feature) permits even burning of the carbons and a proper crater form, at 75 to 115 amperes.

The efficiency of the reflector-system in collecting and focusing the light on the picture aperture is admittedly superior to that of the condenser-type lamps. Employs a 16" mirror, the largest of any reflector-type lamp. The reflector holder is permanently mounted so as to form the rear door of the lamphouse, rendering perfect optical alignment of the reflector, aperture and lens at all times.

Some lamps require a glass heat filter between the lamp and the projector to prevent film buckling. These filters, however, also reduce the amount of visible light passed so that little, if any, more reaches the screen than is obtained from a lesser light source.

Due to the extremely high intrinsic brilliancy of the Motiograph-Hall arc, the total light output contains a much larger percentage of visible light, making the use of a filter unnecessary.

The automatic focus control, an exclusive feature, constantly holds the crater of the positive carbon at the exact focal point of the mirror, preventing variations in the character of the light at the screen.

When the current approaches 2% above normal or falls to 1% below normal, a pilot light flashes and the arc control automatically corrects the gap length. Constant adjustment of manual controls is unnecessary.

The Motiograph-Hall lamp is designed to use 9 mm. or 11 mm. high intensity positive carbons and 5/16" negative carbons, the cost of which is about one-third that of the cost of the larger carbons used in condenser-type lamps operating in the 140-180 ampere range.

Other Motiograph products include Motiograph 1 K.W. and 46-ampere high intensity arc lamps, Motiograph projectors, indoor and outdoor sound systems, generators and rectifiers, in-car speaker equipment and junction boxes, ramp switching panels for drive-ins, turntables, etc.

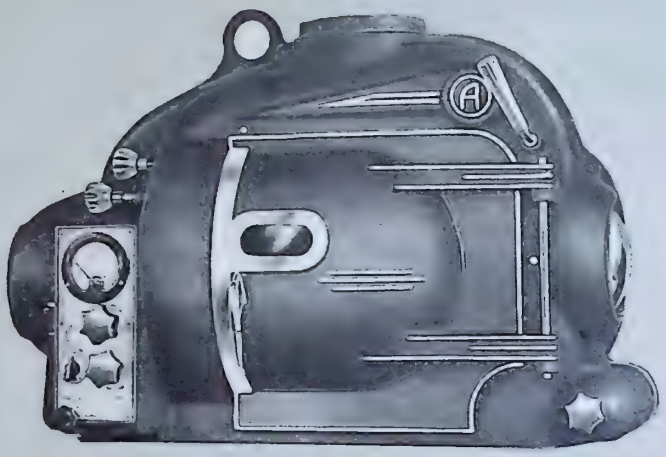
LITERATURE AND COMPLETE INFORMATION MAY BE OBTAINED FROM

MOTIOGRAPH, INC., 4431 W. LAKE ST., CHICAGO 24, ILL.

CONSTANT . . . BRILLIANT WHITE LIGHT

ASHCRAFT

Suprex C70



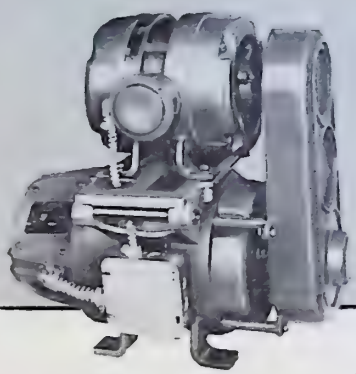
FOR THEATRE SCREENS UP TO 28 FEET AND FOR DRIVE-IN SCREENS UP TO 50 FEET—The Ashcraft Suprex C70's superior optical system in combination with a fully anti-friction mechanism, for perfect arc regulation, results in maximum-uniform screen brilliancy.

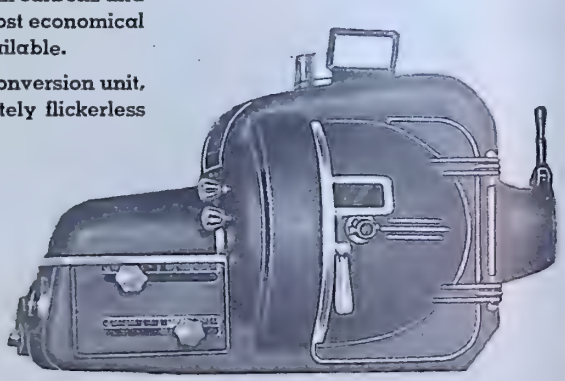
ASHCRAFT Cyclex

REG. U.S. PAT. OFF.

FOR THEATRE SCREENS UP TO 20 FEET — Brilliancy of screen illumination at extremely low operating costs in carbons and current makes Cyclex the most economical light-producing system available.

ASHCRAFT CYCLEX POWER UNIT—Highly efficient conversion unit, produces AC current at proper frequency for absolutely flickerless projection. Full ball-bearing, trouble-free unit.





DRIVE-IN and LARGE THEATRE LAMP

AT A CURRENT INPUT OF ONLY 85 AMPERES, USING A HIGHLY EFFICIENT RECTIFIER — THE SUPREX "80" LAMP PRODUCES A LIGHT EQUAL TO THAT FROM A 150-AMPERE HIGH INTENSITY CONDENSER TYPE LAMP USING A LARGE (approx. 30 H.P.) MOTOR GENERATOR.

FOR DRIVE-IN SCREENS UP TO 65 FEET AND UP TO 35 FEET FOR THEATRE SCREENS. SUPREX "80" PRODUCES 19,500 LUMENS AT 1/4 THE POWER OF HIGH INTENSITY.

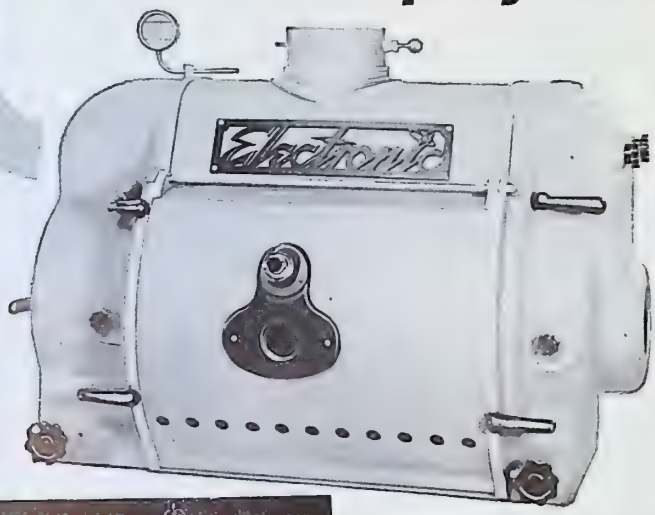
ASHCRAFT Suprex "80"

FOREIGN DISTRIBUTION: WESTREX CORP. • CANADIAN DISTRIBUTION: DOMINION SOUND EQUIPMENTS, LTD. • SEE YOUR INDEPENDENT THEATRE SUPPLY DEALER • WRITE FOR LITERATURE

C. S. ASHCRAFT MANUFACTURING COMPANY

36-32 THIRTY-EIGHTH STREET LONG ISLAND CITY, N. Y.

The New FOREST *Electronic projection lamp*



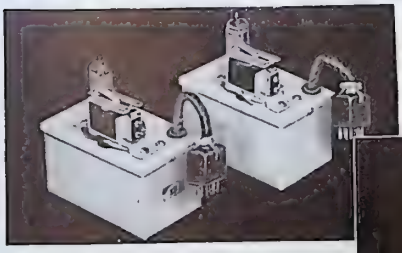
Now Available Quick Delivery

The Forest ELECTRONIC Projection Lamp is in production, available for quick delivery.

This is the ONLY Electronic Carbon Arc Lamp. It is simple in design, faultless in performance. Carbon feed is controlled electronically. Individual solenoids actuate both positive and negative carbons. A constant gap is maintained, thus making possible maximum brilliance of screen image regardless of the throw.

Unit construction means quick and easy maintenance. Electronic timing of actuating impulses means a steady arc without continual manual adjustment by the operator. Low-cost operation means more profit for the house.

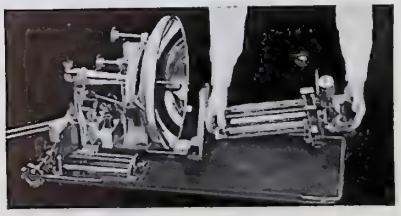
Specify the Forest ELECTRONIC for your next lamp installation.



↑ Electronic Timers control production of actuating impulses. These timing units are replaceable in a matter of seconds.



→ Solenoids actuate individual carbon feed mechanisms. Over 300 parts have been eliminated — no fast moving cams, gears or gadgets to wear out.



← Unit construction of entire assembly is demonstrated here. Note simplicity of design and ease of maintenance.

Write for Free Illustrated Booklet.

FOREST
ELECTRONIC COMPANY INC.
744 Broad St., Newark, N. J.

See Advertisement Page 427 for Data on Rectifiers for Use with the Forest Electronic Projection Lamp.



Peerless MAGNARC

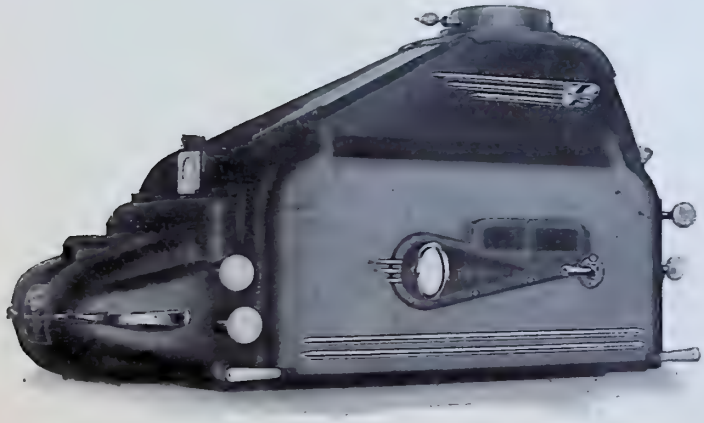
TRADE MARK REG

1-KW TO 70 AMPS

The No. 2866 Magnarc is priced to meet "small" 1-KW lamp competition . . . It is not a "pee wee" or tiny model lamp . . . It is full sized . . . Can be converted at any time to use up to 70 amperes . . . Produces 10% higher screen illumination . . . Employs the largest reflector for 1-KW operation . . . Its many advantages make it the greatest buy in lamps today . . . Does not restrict you to continued 1-KW operation if higher current is necessary . . .

The 2860 Magnarc is the finest arc lamp built . . . At 70 amperes it produces 10% more light . . . Every conceivable feature provided, including carbon trim end, signal lights . . . Assures 80% side to centre screen illumination . . . No "Hot" centre of light . . . The first choice of the industry . . .

"FIRST WITH THE FINEST"



Peerless HY-CANDESCENT

TRADE MARK REG

120-180 AMPERES
MAXIMUM LIGHT

This modern lamp with coated "Hy-Speed" F 2.0 condensers and light heat filter glasses produces all the light there is . . . It is standard equipment of the majority of the largest theatres in the country . . . It is used by 80% of the largest Drive-In Theatres.

It is "omega" when the question of maximum screen illumination is considered . . . Nothing can approach it in light volume . . . Assures satisfying projection regardless of the size of the projected picture, length of throw and weather conditions . . .

Cannot be equalled by lower current lamps . . .

"WHY EXPERIMENT?"

J. E. McAULEY MFG. CO.

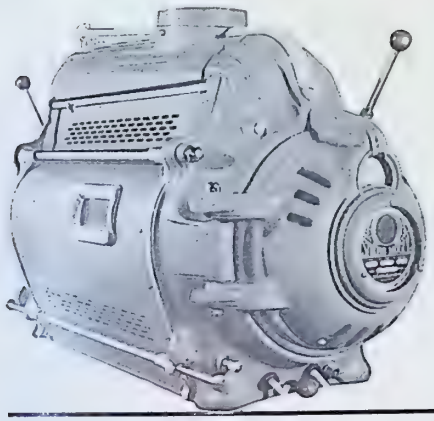
552-554 WEST ADAMS STREET
CHICAGO 6, ILLINOIS

NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc.

A UNIT OF NATIONAL STANDARD PROJECTION SYSTEM

STRONG
PROJECTION LIGHTING EQUIPMENT

As the only projection arc lamps manufactured complete within one Factory, Strong Lamps can be so Engineered as to guarantee best screen results.



THE STRONG MOGUL

70-AMPERE • 40-VOLT PROJECTION ARC LAMP

FOR THE BRIGHTEST POSSIBLE PICTURE ON THE BIGGEST SCREENS

Projects 15,000 lumens of light—the maximum that film will accept without damage—at the lowest possible cost.



STRONG UTILITY 1 KW. HIGH INTENSITY PROJECTION ARC LAMPS

for twice the light on screens up to 18 feet in width.

When the lamps are ***STRONG*** *the picture is bright!*

STRONG
6-TUBE RECTIFIERS



Designed for use with high intensity arcs to product exceptionally smooth output current even beyond the normal requirements of the largest theatres.

The maximum operating load is sufficiently below the capacity of the six 15-ampere tubes to result in exceptionally long life. Regularly supplied for use on 220-volt, three-phase, 60-cycle power service. These rectifiers come in three capacities of: 50, 65 and 80 amperes.

STRONG
COPPER OXIDE RECTIFIERS



A rugged, simple and dependable equipment for converting three-phase alternating line supply current to direct current for use with high intensity projection arcs of from 45 to 65 amps capacity. Transformer taps provide for adjusting the output current over a wide range of amperages and voltage.

Requires no attention or maintenance.

There are no moving parts to wear out, make noise or disintegrate.

Built in single lamp units and in two sizes adjustable from 45 to 50 amperes and 45 to 65 amperes.

STRONG
4-TUBE RECTIFIERS



Built in two capacities, the 4-ampere single-phase for use with the 1 KW. arc lamp, and the 50-ampere three-phase for use with larger high intensity lamps, adjustable from 45 to 50 amperes with 35 volts across the arc.

The 40-ampere single-phase rectifier has the exacting volt-amperage characteristics and smoothing reactance to assure a stable burning 40-ampere, 28-volt arc.

The 50-ampere 3-phase rectifier has been designed especially to supply DC power to high intensity arcs that are adjustable between 45 and 50 amperes with 35 volts across the arc.

STRONG
2-TUBE RECTIFIERS



The best device for converting alternating current line supply to direct current for low intensity arc operation.

Comprised mainly of a special transformer, a radial switch for regulating the current to the desired number of amperes, two rectifier tubes, a substantial housing, and the necessary sockets, lead wires, etc. An efficiency of 75 per cent means a saving in current, which will soon equal the purchase price. Two models, 15-ampere and 30-ampere.



STRONG REFLECTORS

Since the only light which can reach the screen must be reflected by the mirror, the loss in screen light during the gradual deterioration of a reflector is in direct proportion to the loss in mirror efficiency. Light losses through the use of worn-out reflectors, and amounting to several hundred dollars a year, are not unusual. Endeavoring to make up this light loss through the use of more current similarly represents a pure waste in the form of unwarranted power bills, all of which makes the cost of periodic mirror replacement a good investment. Strong precision reflectors in a variety of types and sizes for use in all standard projector arc lamps have long been recognized as a dependable standard of quality.

Write today for free literature on any STRONG products

THE STRONG ELECTRIC CORPORATION

The World's Largest Manufacturer of Projection Arc Lamps

87 CITY PARK AVENUE **TOLEDO 2, OHIO**



High Intensity Arc Lamps | One Kilowatt Arc Lamps | Low Intensity Arc Lamps | Portable Arc Lamps | Junior High Arc Lamps for 35 mm. | Junior High Arc Lamps for 16 mm. | Strong two-tube Rectifiers | Delaware two-tube Rectifiers | Four-tube Rectifiers | Six-tube Rectifiers | Copper Oxide Rectifiers | Precision Reflectors

J. E. ROBIN, Inc.

Worldwide Distributors of Quality Motion Picture Equipment

330 W. 42nd STREET
NEW YORK 18, N. Y.
Cable "JEROBIN NEW YORK"

THE ROBIN-IMPERIAL

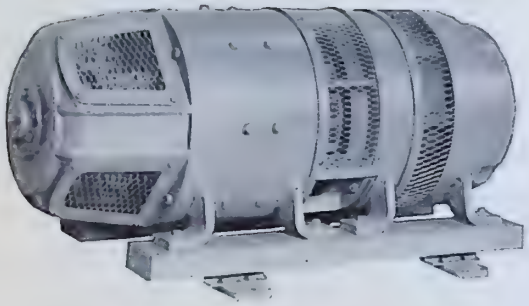
Stedypower

Standard and Custom Built

MOTOR GENERATORS
FREQUENCY CHANGERS
DIESEL ELECTRIC SETS

for every purpose in

THEATRE • DRIVE-IN • STUDIO • TELEVISION



TWO-BEARING MOTOR-GENERATOR SET

Designed specifically for projection arc lamp requirements. Not just motors or generators, but a guarantee of service—power plants with 59 years' electrical know-how and 43 years' motion picture experience "built in"! The show must go on—and does—with the Stedypower. Avoid arc power failures and refunds by installing only a Stedypower. Constant screen light, even during changeovers. Liberal overload capacity. Quiet, vibration free operation. Sparkless commutation. A wide range of voltage and amperage ratings. A lifetime of trouble-free service.

ROBIN SELENIUM RECTIFIERS



25 to 37 volts—full wave—6 or 3 phase—50 or 80 amperes. Has a much higher reverse voltage rating, approximately four times that of the other types of rectifiers. Where voltages over six volts are involved, the selenium rectifier, by virtue of this higher reverse voltage, requires fewer plates and has a greater safety factor. The use of a base plate of aluminum in the rectifier materially reduces its weight, eliminates rusting, and facilitates faster radiation. The efficiency is uniformly high over a wide range of load, and it has an almost 100% power factor. A remote control panel is provided which can be located in any convenient place in the projection room. With this panel the projectionist can start and stop either rectifier, or switch the same rectifier from one lamphouse to the other.

Long life. No ballast resistors required. No warm-up period necessary. Heat-proof transformers. Adjustable for line voltage of 190 to 240 volts A.C. D.C. output controlled in 2-volt steps.

SEE YOUR INDEPENDENT THEATRE SUPPLY DEALER OR WRITE DIRECT

J. E. ROBIN, Inc.

EVERYTHING FOR THE THEATRE
Representatives Throughout The World

330 W. 42nd STREET
NEW YORK 18, N. Y.
Cable "JEROBIN NEW YORK"

IDEAL CHAIRS

FOR EXPORT
Including the New
IDEAL SLIDE-BACK CHAIR



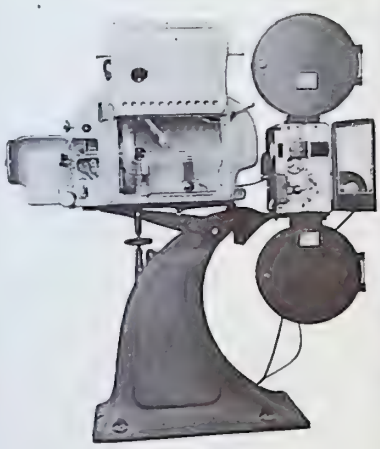
Ideal chairs to meet every need, fit every budget. The chairs you sit IN, not ON; the chairs in which you can relax in deep-cushioned comfort. A wide variety of models, end standards and upholstery.

IMPERIAL RECTIFIER BULBS

PROJECTOR PARTS

SYNCROFILM THEATRE SPEAKERS

ROBIN-WEBER SYNCRO-DYNAMIC SOUND PROJECTORS



Engineered and manufactured by Weber Machine Corp.

Licensed under U. S. patents of A. T. & T. and Western Electric Company. A dependable, compact unit which combines modern 35-mm. projection and sound. Unexcelled performance. Smooth, quiet operation. Flickerless steady projection. Easy straight line threading.

ROBIN-IMPERIAL IN-CAR 4-INCH SPEAKER UNITS



Manufactured by Tarrytown Metalcraft Corporation

SYNCROFILM SOUND HEADS
WITH DYNAMIC FILTER

High quality natural sound reproduction. Dependable, trouble-free performance. Ease of operation. Economical. Readily adapted to any standard projector.

J. E. ROBIN, INC.
330 W. 42nd Street, New York, N. Y. Date.....

Gentlemen:

Please send information (with no obligation) on the following:

- ☐ Robin-Imperial Stedypower Motor Generators
- ☐ Robin Selenium Rectifiers
- ☐ Ideal Chairs (For Export)
- ☐ Robin-Weber Synchro-Dynamic Sound Projectors
- ☐ Robin-Imperial In-Car 4-Inch Speaker Units

NAME OF COMPANY.....

BY.....TITLE.....

ADDRESS.....

SEE YOUR INDEPE

J. E. ROBIN, Inc.

EVERYTHING FOR THE THEATRE
Representatives Throughout The World

330 W. 42nd STREET
NEW YORK 18, N. Y.
Cable "JEROBIN NEW YORK"

IDEAL CHAIRS

FOR EXPORT
Including the New
IDEAL SLIDE-BACK CHAIR



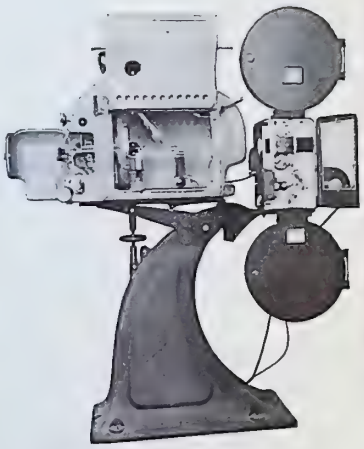
Ideal chairs to meet every need, fit every budget. The chairs you sit IN, not ON; the chairs in which you can relax in deep-cushioned comfort. A wide variety of models, end standards and upholstery.

IMPERIAL RECTIFIER BULBS

PROJECTOR PARTS

SYNCROFILM THEATRE SPEAKERS

ROBIN-WEBER SYNCRO-DYNAMIC SOUND PROJECTORS



Engineered and manufactured by Weber Machine Corp.
Licensed under U. S. patents of A. T. & T. and Western Electric Company. A dependable, compact unit which combines modern 35-mm. projection and sound. Unexcelled performance. Smooth, quiet operation. Flickerless steady projection. Easy straight line threading.

ROBIN-IMPERIAL IN-CAR 4-INCH SPEAKER UNITS



Manufactured by Tarrytown Metalcraft Corporation

SYNCROFILM SOUND HEADS
WITH DYNAMIC FILTER

High quality natural sound reproduction. Dependable, trouble-free performance. Ease of operation. Economical. Readily adapted to any standard projector.

PLACE STAMP HERE

J. E. ROBIN, INC.
330 WEST 42nd STREET
NEW YORK 18, N. Y.

SEE YOUR INDEPENDENT THEATRE SUPPLY DEALER OR WRITE DIRECT

J. E. ROBIN, Inc.

EVERYTHING FOR THE THEATRE
Representatives Throughout The World

330 W. 42nd STREET
NEW YORK 18, N. Y.
Cable "JEROBIN NEW YORK"

IDEAL CHAIRS

FOR EXPORT
Including the New
IDEAL SLIDE-BACK CHAIR



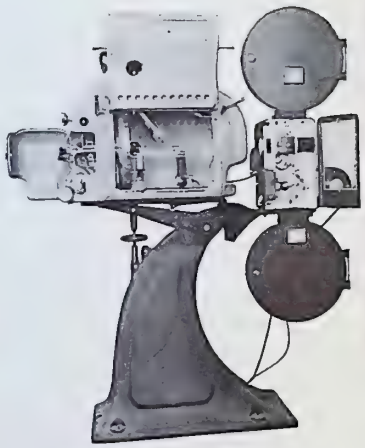
Ideal chairs to meet every need, fit every budget. The chairs you sit IN, not ON; the chairs in which you can relax in deep-cushioned comfort. A wide variety of models, end standards and upholstery.

IMPERIAL RECTIFIER BULBS

PROJECTOR PARTS

SYNCROFILM THEATRE SPEAKERS

ROBIN-WEBER SYNCRO-DYNAMIC SOUND PROJECTORS



Engineered and manufactured by Weber Machine Corp.
Licensed under U. S. patents of A. T. & T. and Western Electric Company. A dependable, compact unit which combines modern 35-mm. projection and sound. Unexcelled performance. Smooth, quiet operation. Flickerless steady projection. Easy straight line threading.

PHOTO-ELECTRIC CELLS

SYNCROFILM THEATRE AMPLIFIERS

ROBIN-IMPERIAL IN-CAR 4-INCH SPEAKER UNITS



Manufactured by Tarrytown Metalcraft Corporation

SYNCROFILM SOUND HEADS
WITH DYNAMIC FILTER

High quality natural sound reproduction. Dependable, trouble-free performance. Ease of operation. Economical. Readily adapted to any standard projector.

TITAN EMERGENCY LIGHT BATTERIES

Long-lasting, Powerful, Dependable, Steady. Fully Guaranteed. All sizes and capacities.

SYNCROFILM PORTABLE 35-MM. PROJECTORS

SEE YOUR INDEPENDENT THEATRE SUPPLY DEALER OR WRITE DIRECT

the light is the picture BRIGHT RIGHT WITH RECT-O-LITE

Rect-O-Lite is made by Baldor, who has specialized in the manufacture of quality electrical equipment since 1920. In designing Rec-O-Lite, our engineers kept foremost in mind that the chief purpose of a theatre is to project a satisfactory picture onto the screen. Accordingly, no effort or cost has been spared in building Rect-O-Lite. Please take note of the substantial net weight of each model listed below. Rect-O-Lite has large transformers to assure reliable operation; large choke coils to obtain a smooth D. C. output; result: a bright, flickerless light on the screen. We list below some of the outstanding features of the Suprex rectifier illustrated at right:

- **Produces brilliant and flickerless light on screen.**
- **Most reliable rectifier on the market. It has no moving parts.**
- **Rectifying elements are the standard fifteen ampere bulbs, which can be replaced quickly, conveniently, and inexpensively.**
- **Saves enough current to pay for itself. Write us for proof.**
- **Does not deteriorate with age. RECT-O-LITE maintains its original high efficiency during its entire life.**
- **Has two 7-point control dials for quick regulation of the arc current.**
- **3 Phase types have voltage terminals of 210, 230, and 250 volts to provide for variation in line voltage.**
- **Backed by Baldor's twenty-seven years' specialized experience.**



GUARANTEED ONE YEAR



LOW INTENSITY RECT-O-LITE

The low intensity Rect-O-Lite delivers 15 to 30 amperes at 50-55 D. C. volts. This result is obtained through the use of transformer and choke coil only—no resistance of any type is used in any Baldor rectifier. The ample use of first grade materials assures reliable operation under all conditions (net weight of 30A Rect-O-Lite 107 lbs.). Thousands of Baldor 30 ampere rectifiers are in daily use giving complete satisfaction.

SPECIFICATIONS RECT-O-LITE MOTION PICTURE RECTIFIERS

Cat. No.	Case	OUTPUT Volts at Arc	OUTPUT Amps. at Arc	INPUT Volts	INPUT Cycles	INPUT Phase	Net Weight	USES
R14	30A	50-55	15-30	115	60	1	107	Low Intensity Arc
R18	45A	27-32	35-45	230	60	1	205	Intermediate Suprex Arc
R20	45T	27-32	35-50	230	60	3	205	Intermediate Suprex Arc Suprex Arc 7 mm. and 6 mm.
R24	60A	31-40	35-60	230	60	1	265	Suprex Arc 7 mm. and 6 mm. Suprex Arc 8 mm. and 7 mm. Spotlight
R26	60T	31-40	35-60	230	60	3		

BALDOR ELECTRIC COMPANY
4357 Duncan Ave. Apparatus Department St. Louis, Mo.

FOREST RECTIFIERS • SCREENS

More Value and More Power for Less Money!

The New Highly Improved Rectifiers

40 TO 75 AMPERES 75-V-6 **40 TO 50 AMPERES 45-V-6**

Single type Six-Tube Rectifiers that achieve a new high rectification efficiency at the lowest possible cost of power, embodying the advanced knowledge gained from building rectifiers for radar and other highly scientific projects where perfection of performance and reliability are of paramount importance. Forest is recognized as the leading manufacturer of power conversion equipment. These new and improved rectifiers are the finest for today's requirements, and also have built into them a reserve capacity to make them easily adaptable for tomorrow's improved carbon which may demand a higher amperage than at present. Designed for all theatres using Suprex or Simplified High Intensity Projection.

- Single-type models designed to save booth space.
- Full 3 Phase Rectification.
- Operates from 3 Phase A.C. Line.
- Built-in Remote Control Relays with Provisions for Operating Spotlights.
- No Moving Parts.
- Power with Flexibility—Constant and Uniformly Smooth Arc Current—No Flicker.
- Quiet Operation—Ease of Operation.
- Standard High Quality Bulbs.
- Sturdily Constructed, All Steel Case.
- Underwriter's Listing.





SUPER MCS

Super MCS RECTIFIER

Forest Super Magnesium-Copper Sulphide Rectifier with the exclusive Forest transformer is internationally recognized for its superiority in every way. It gives definite assurance of protection from line voltage fluctuation. Some of the exclusive Forest features are: reliable 3 phase fan, magnetic switches, automatic voltage regulator—housed in a sturdily built modern design case. Approved by Underwriters Laboratories.

LD-60 Bulb-Type RECTIFIER

LD-60 Bulb-Type Rectifier is acclaimed for its reliability, efficiency, and low cost power conversion device to supply projection arcs. Forest rectifiers conform in every way to the standards required for modern projection. Each rectifier serves one lamp and has an output from 30 to 60 amperes for Simplified High Intensity operation. This rectifier, with the Forest Lamp, meets the demand of the smaller theatre where an inexpensive source of light is required.



LD-60

LD-30 RECTIFIER

Low Intensity Rectifier—a bulb-type rectifier of dependability with ample amperage leeway to insure reserve power. Housed in sturdy all steel case.

RECTIFYING TUBES

For rectifiers, power supply units and battery chargers of all makes. When used in Forest Rectifiers you are assured of maximum efficiency, reliability of operation and maximum economy.

SOUND SCREENS

The special Forest Surface-Processing Method eliminates the necessity of increasing amperage at the arc to obtain increased light on screen. They are all flame-proofed.

FOREST MANUFACTURING CORP.

9-11 WEST PARK ST.
NEWARK 2, N. J.

For the Best Projection Arc Lamp Write for Free Booklet on Forest Electronic Control Projection Arc Lamp—See Page 421

TransVerteR

Reg. U. S. Pat. Off.

FIRST CHOICE OF MODERN THEATRES EVERYWHERE

For steady screen illumination
leading theatre owners depend on a

TransVerteR

Reg. U. S. Pat. Off.



The Transverter is distributed by National Theatre Supply

Hertner

THE HERTNER ELECTRIC COMPANY

12690 ELMWOOD AVE. • CLEVELAND 11, OHIO

A General Precision Equipment Corporation Subsidiary

MOTORS • MOTOR-GENERATORS • GENERATOR SETS

KNEISLEY Presents a Complete Line of *Newly Designed* KNI-TRON Rectifiers



..each with Positive Action Rotary Dial Switch



70-TK
80-TK

60-TK
60-AK

40-AK
50-AK

30-AK

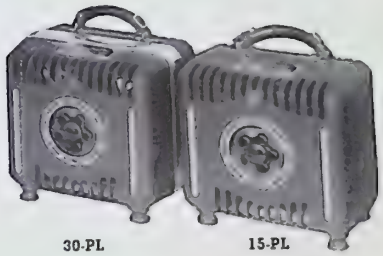
In the 6 case styles of KNI-TRON Rectifiers shown here you will find a design to fit every motion picture arc application from the Low Intensity Arc to the Suprex Arc. Each is designed to fit a particular arc requirement.

The new streamlined cases, designed with an eye to beauty as well as efficiency, are finished in Gunmetal Hammertex Baked Enamel with Chrome and Red trim. All have rounded corners.

ROTARY TAP SWITCH

All KNI-TRON Rectifiers are equipped with the newly designed Rotary Tap Switch . . . the switch that guarantees complete current control, long life and trouble-free operation. Current regulation is controlled by ONE Bakelite Insulated Handle assuring quick easy operation.

Built for Long Life and High Efficiency, KNI-TRON Rectifiers have no moving parts, no bearings, no brushes to replace.



30-PL 15-PL

KNI-TRON MASTER PORTABLE RECTIFIERS

have the same built-in high efficiency and long life as our standard rectifiers. Light weight and built to occupy less projection room space, they are also ideal for portable use. Hinged housing provides quick and easy access to all parts. Equipped with positive action dial switch.

COMPLETE SPECIFICATIONS

Ref Number	Type of Rectifier	D.C Amps	D.C Volts	A.C Voltage	Phase	Overall Dimensions	Net Weight Lbs	Shipping Weight Lbs.	Tubes Req'd.
15-PL1 15-PL2	Master Low Intensity	20	50 to 55	110 or 220	Single	12x12x 9¼	58	73	2- 6 Amp.
30-PL	Master Low Intensity	30	50 to 55	110 220	Single	12x12x11	67	83	2-15 Amp.
30-AK1	Standard Low Intensity	30	50 to 55	110 220	Single	23x12x10½	74	96	2-15 Amp.
40-AK	1KW High Intensity	40 to 42	27 to 28	110 220	Single	23½x12x15½	142	158	4-15 Amp.
50-AK	1KW or 50 Ampere	40 to 50	27 to 36	110 220	Single	23½x12x15½	150	166	4-15 Amp.
60-AK2	High Intensity	56 to 62	32 to 40	220	Single	23½x12x24	196	226	4-15 Amp.
60-TK2	Intermediate High Intensity	40 to 60	27 to 36	220	Three	23½x12x24	176	211	4-15 Amp.
70-TK2	High Intensity	50 to 65	32 to 40	220	Three	23½x12x24	211	245	6-15 Amp
80-TK2	High Intensity	65 to 80	32 to 40	220	Three	23½x12x24	211	245	6-15 Amp

PROJECTION KNI-TRON EQUIPMENT RECTIFICATION

Every KNI-TRON Rectifier is subjected to rigid inspection and countless efficiency tests before leaving our plant. Every one is guaranteed against defective workmanship or material. Write for complete descriptive literature and prices. Address Department 39.

THE KNEISLEY ELECTRIC COMPANY, Toledo 3, Ohio, U. S. A.

Better Projection . . . Lower Cost



INCREASED REFLECTION
CUTS CURRENT COSTS . . .

The Vocalite and Super-lite screens are made to fit all types of theatre construction and projection equipment. The increased reflection and improved sound efficiency of Vocalite and Super-lite screens make them the ideal replacement of an out-worn screen.

See what a difference a good screen makes. Resists dirt. Easily cleaned. Cuts your operation costs. Inefficient screens result in eye strain and a loss at the boxoffice.

NEW IMPROVED VINYL PLASTIC COATINGS AND MATERIALS
WASHABLE • MOLD PROOF • FUNGUS PROOF • FLAME PROOF

New Super **Vocalite Sound Screen** **CRYSTAL BEADED**

VOCALITE BEADED SOUND SCREEN—for theatres equipped with low intensity or Mazda lamps. VOCALITE has a normal brilliancy factor of 267%, which compensates for low light source of low intensity or Mazda lamps. Five to six times more permeability of sound; the optical effect of depth. Perfect for color pictures.

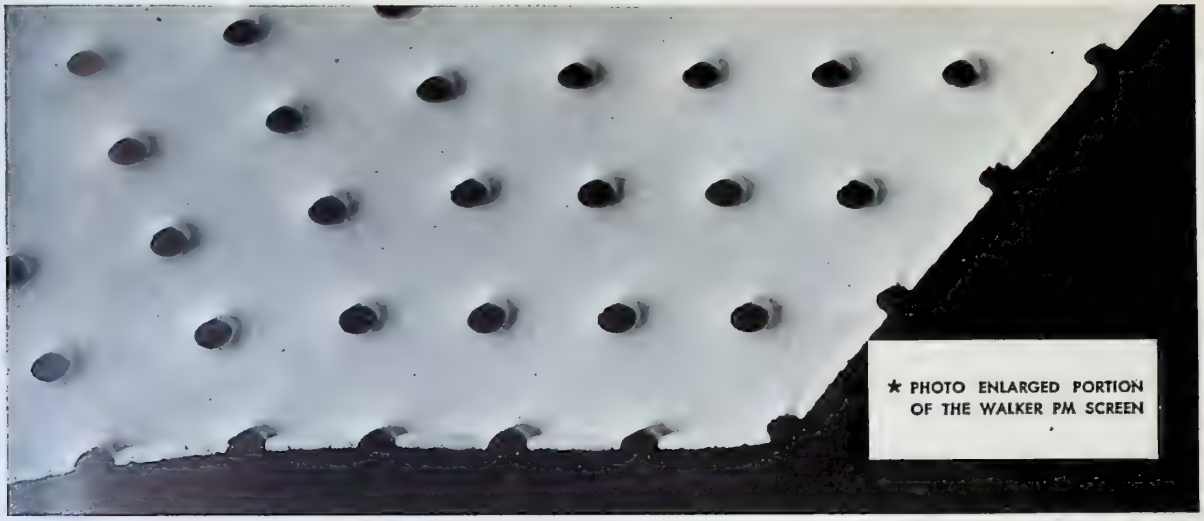
The New **Super-Lite** *PERFORATED* **Sound Screen**

SUPER-LITE—A white vinyl plastic coated material having a light reflection co-efficient of 87+. Entirely diffusive, it will give the same light value for every seat in the theatre. Gives fine detail to the picture and a faithful reproduction of tone and color values. Attenuation less than 2 decibels at 8000 cycle frequency.

For details — See your SUPPLY DEALER

VOCALITE SCREEN CORPORATION

Roosevelt, New York, U.S.A. — Cable Address, "VOCALITE" Freeport, N. Y., U.S.A.



WALKER PLASTIC MOLDED SCREEN

BRINGS NEW RICHNESS AND BEAUTY TO THE FILM IMAGE

This unique construction adds, to the picture, new BRILLIANCE, DEPTH and REALISM. Widespread use by American and Foreign exhibitors since its introduction in 1940 is proof of its practical qualities. The durable molded plastic surface delivers superior projection and sound throughout its long life.

PM—is molded of tough, durable plastic in a continuous surface without seams up to 22'-6" x 34'-0".

PM—sound transmission holes are molded in the shape of smooth flaring horns. The holes are not perforated.

PM—has a surface of tiny curves giving depth to the screen.

PM—plastic surface is hard and smooth which resists dirt and lends itself to quick, effective cleaning.

PM—produces a strong illusion of depth in the picture.

PM—sharply reduces distortion from side seats, improves front seat viewing.

PM—provides clearer sound . . . better high frequency audibility.

PM—performance can be maintained at top efficiency for at least three years by cleaning with Walker P.M. chemical cleaner.

WALKER - PM - SCREENS

Distributed by

NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc.

A UNIT OF NATIONAL STANDARD THEATRE EQUIPMENT

for the *ultimate* in motion picture image quality . . .



BAUSCH & LOMB

BALTAR LENSES for CINEMATOGRAPHY

Leading professional cameramen, who are distinguished internationally for superlative motion picture photography, prefer Baltars. They know that Baltars meet their most exacting needs for 35 mm and 16 mm in black-and-white and color.



BAUSCH & LOMB

SUPER CINEPHOR LENSES for PROJECTION

To cameramen who film process backgrounds, and to theatre operators everywhere Super Cinephor means screen images of highest edge-to-edge brilliance and sharpness.

Write for complete information

BAUSCH & LOMB

OPTICAL COMPANY ROCHESTER 2, N. Y.

For Utmost Image Quality

THE f/1.9
SUPER-SNAPLITE
6-ELEMENT ANASTIGMAT



COMPARE THESE ADVANTAGES!

. . . Six elements for wide-angle, high-magnification, wire-sharp projection!

. . . magnificent screen brilliance!

. . . greater light, sparkling contrast!

. . . trouble-free performance; dustproof, oilproof!

. . . can't flake off!

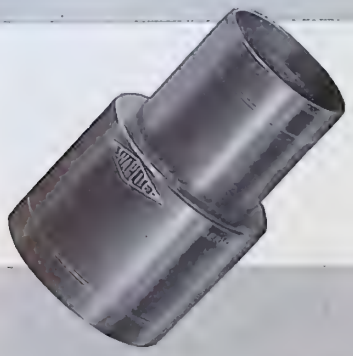
Wider-angle projection . . . higher magnification . . . utmost image quality are yours with the spectacular new Super-Snaplite!

Because it's a true anastigmat, the Super-Snaplite produces extremely high magnifications, in short throws, with exceptional detail — gives incomparable image quality in longer throws!

And this superb performance is *permanent* — thanks to the hermetically sealed, one-piece high-strength aluminum alloy mount! The Super-Snaplite is dust-proof, moisture-proof, oil-proof — never needs to be taken apart for cleaning! The anti-reflection coating is hard, durable, too!

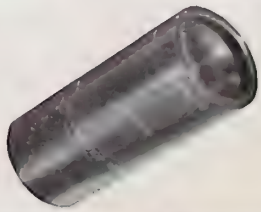
Focal lengths range from 2" through 5" in ¼" steps. Speed of f/1.9 is maintained throughout. Get the complete details of the new Super-Snaplite by writing for Bulletin 203!

SUPERB FOR COLOR!

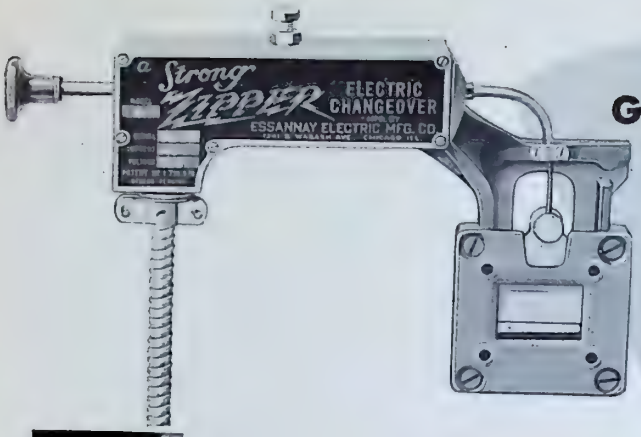


SNAPLITE SERIES II
Speed of f/2.0
Hermetically sealed
Coated lenses standard

SNAPLITE SERIES I
Speed up to f/2.3
Anodized finish
Coated lenses optional



KOLLMORGEN *Optical* **CORPORATION**
2 Franklin Avenue
Brooklyn 11, New York



Give Your Projectionist

TRADEMARK

TO ASSURE *Continuous Performance*



NOW . . . NEW . . . Strong *Zipper* changeovers are equipped with thermostats to eliminate burn-outs . . . Hand-switch levers front and rear to permit operation from either side . . . Easily accessible terminal block . . . and a streamlined design, in keeping with the Projectionist's specifications.

Zipper changeovers are available in three standard models: (1) Strong *Special* changeover for porthole installations; (2) *Zipper* picture changeover for projection-head mounting; and (3) the new *Dual-Purpose Zipper* changeover for sight and sound.

The *Zipper* changeover is the *only* changeover on which the speed is adjustable . . . the only changeover guaranteed by both manufacturer and jobber. The Strong *Zipper* changeover uses a flexible shaft, thus eliminating all rods, connection bolts and lock-springs, which jam or wear out, disrupting an otherwise perfect performance. *Zippers are available for all standard projectors — are useable with all makes.*

Designed by a projectionist to help every projectionist give the "perfect show," Strong *Zipper* changeovers, Strong Reel End Signals and Strong Universal Rewind "Mules" warrant the exhibitor's purchase-approval in the interest of audience satisfaction. Essannay Electric Manufacturing Company, 1438 N. Clark St., Chicago 10, Illinois. Export: Westrex Corp., 111 8th Ave., New York 11.

Film-Weld

TRADE MARK

Successor to Film Cement



The NEW, improved, positive method of permanently patching all types and makes of film — 8mm., 16mm., 35mm., Tru-Kolor, Technicolor, Kodachrome, Nitrate and Safety Film. FILM-WELD actually dissolves film—fuses it into one *lasting* piece. FILM-WELD retains its strength; is easy to use for hand or machine splicing. Use FILM-WELD for the *lasting* patch. Available in 1 and 8 oz. bottles and 16 oz. cans. Used and endorsed by projectionists in countless theaters.



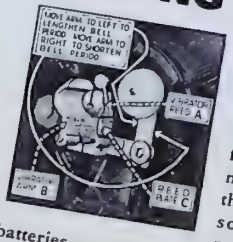
STRONG UNIVERSAL REWIND MULE



No more delayed shows, due to broken rewind keys and shafts . . . No more fevered dismantling of vital equipment to install new parts . . . No more need for makeshift rewind collars in the projection booth . . .

Simple, rugged, and positively foolproof, the new STRONG REWIND Drive "Mule" fits any enclosed rewind. A flick of the thumb, and it is set to take 4″, 5″ and Exchange reels.

STRONG REEL-END SIGNALS



STRONG REEL END SIGNALS are available for all projectors. Do not touch film or reel, thus eliminating film scratching. Strictly mechanical, require no batteries, no transformers, no governors, and no presetting. Strong REEL END SIGNALS can be installed in five minutes . . . can be counted on for years of day-in, day-out, trouble-free service.

STRONG'S *Zipper* TRADEMARK CHANGEOVERS

ESSANNAY ELECTRIC MANUFACTURING CO. . . 1438 NORTH CLARK STREET, CHICAGO 10, ILLINOIS

HEATING, VENTILATING *and* AIR CONDITIONING

1948-49

Glycol Vapor: Latest in Air Purification

Product and Application Information on Triethylene Glycol Which Promises Efficient and Simple Theatre Use

At long last, theatre men can get out from under the stigma of "keep away from theatres" whenever colds and other contagious ailments threaten the populace en masse. Thanks to the accidental discovery in 1939 of triethylene glycol's highly potent germicidal activity, operators and owners can breathe more easily—as their customers breathe more healthfully—knowing they have liquidated that old villain of the box office, the air-borne germ.

Naturally, there is a great deal of interest now in triethylene glycol (the active chemical in glycol vapor, sometimes known to chemists as merely TEG), its properties and behavior. And for the many theatre operators considering the addition of air sterilization to an already impressive list of services, primary interest is centered in the commercial application of this "new" chemical to their own houses.

Glycol vapor—triethylene glycol released in the air in true vapor form—is easy to use and to further endear it to the trade, it is odorless, tasteless and invisible. Nor do its virtues end there. It is non-irritating, non-toxic and non-corrosive. Although it is deadly to air-borne germs, it is harmless to human beings who usually are never aware of its presence; and has no effect on furnishings, machinery, or any of the numerous appointments worked into the general decor by architect and interior decorator. And, above all, it is safe. The presence of glycol in the theatre creates no fire hazard.

In fact, its properties approach pretty closely those of an ideal germicide. Triethylene glycol (vaporized) works wonders when broken down into literally billions of molecules swimming in an aqueous solution. It is not only extremely effective functionally but also well-behaved in its normal operating environment. The data books reveal that:

1. The moisture vapor pressure of a 95% solution at 90° F. is 4 mms. of mercury; at 75° F., 2.2 mms.; and at 70° F., 1.8 mms.
2. A 92% solution has a vapor pressure of 120 mms. at 200° F. and can be economically concentrated at that temperature.
3. Glycol vapor is non-electrolytic. Dissimilar metals in contact do not exhibit the customary deleterious bi-metallic effect.
4. TEG's chemical balance is stable. Triethylene glycol does not go over on the acid side after prolonged contact with city air, requires no inhibitor or pH control, remains close to neutral with a pH near 7.
5. Glycol vapor is not only odorless but actually destroys spores and molds that cause musty odors in air conditioning equipment.
6. The flashpoint of triethylene glycol is 330° F. In air conditioning, the glycol always contains some water and therefore should not flash at all.
7. Glycol can be readily pumped.
8. A 95% solution has an initial crystallizing temperature of –16.8° F. A 90% solution freezes at –52° F..
9. Glycol is non-toxic at the relative saturation used. By volume, glycol concentration is about 0.00007% which compares roughly to that of the rare gas krypton, in the atmosphere.
10. Triethylene glycol does not stimulate corrosion of metal parts in air conditioning equipment.
11. Glycol vapor can be used in the theatre's present ventilating system.

Glycol vapor is an effective nemesis of air-borne germs in the incredible dilution of one gram to half a billion cubic centimeters of air. Maximum efficiency is obtained with the air at relative humidities between 30 and 70%. Equally effective killing is possible at lower humidities only if higher glycol relative saturation values are maintained.

Under optimum conditions, which consist of temperatures of 70° to 80° F., relative humidity under 60%, and a quantity of glycol vapor sufficient to produce at least half-saturation of the air, the rate at which pathogenic organisms are destroyed is extremely rapid. Glycol vapor under optimum conditions will kill all air-borne bacteria and virus almost instantaneously. In about the same time it takes to say the name of the high-powered germ-killing chemical, the doomed pathogens reach the end of the line.

In a dramatic test of triethylene glycol's murderous attack on pathogens in the air, as little as three one-hundredths of a gram of glycol spray completely sterilized a chamber swarming with more than 12,000,000 bacteria. Among this select group it killed many of the most dangerous gangs in the germ world—staphylococci, pneumococci, streptococci and a host of other unpleasant characters.

By deliberately disintegrating the glycol into molecules—billions of organic molecules—the vaporizer releases a potent horde of germ-killers that wreak a bacterial and virus massacre. Glycol being hygroscopic penetrates the moist bacteria and establishes a heavy glycol concentration inside the bacterial cell.

The cost of glycol air treatment is well within reason. Theatre buildings equipped with air conditioning or circulating systems can be set up for glycol vaporization for as little as $500. One small vaporizer, measuring only 15 inches on a side, can handle a 250,000 cubic-foot building, or supply sterilized air for 1500 people on a basis of 10 c.f.m. fresh air make-up per person. Approximate cost of glycol for a year's operation: $100. This is not surprising, however, when the extremely low vapor pressure of triethylene glycol is considered, the vapor pressure at 70° F. being approximately 0.001 mm. of mercury. Because of this, dry air at 70° F. is saturated when it contains approximately one-half pound of vapor per million cubic feet. At 50% relative humidity, the approximate cost of triethylene glycol required to kill all air-borne bacteria and virus in 1,000,000 cubic feet of air at 70° F. is $0.020 and at 30% relative humidity the cost is $0.033.

Glycol vapor installations now include: Johnson and Johnson, Philip Morris Tobacco Co., Ltd., Parke Davis, Merck and Company, Carbide and Carbon Chemicals, Keifer Contagious Hospital, Detroit, Mich., Premature Baby Ward of the New York Hospital and the Rivoli Theatre in New York. Two of the more interesting facts are these: Merck is utilizing glycol in several processing rooms, the filtration room and the cooling room in its streptomycin plant in Rahway, N. J., for there is much evidence to suggest that such air disinfection is of prime value in minimizing antibiotic contaminations. Johnson and Johnson is using glycol vapor in the ampule sealing room of the Ethicon Suture plant at Milltown, N. J., and is also experimenting with the use of glycol vapor in several offices at New Brunswick.

At the Lockheed Aircraft plants in Burbank, California, vaporizers were installed in two buildings housing about 1,000 workers. Almost identical buildings in the Vega plant across the street were used as controls. U.S. Army nurses followed up every absent employee to determine whether his failure to work was actually caused by a respiratory infection. In a six week period nearly one per cent of all working time at Vega was lost because of colds and sniffles, while in the very same weeks the time loss at Lockheed stood at less than half of one per cent. Lockheed saved a total of 160 man-days of working time in that short period.

Committees of the National Institute

of Health, U. S. Public Health Service are studying and reviewing the promising results obtained with glycol as the germicidal agent. Installations in Johns Hopkins Hospital in Baltimore, and Bellevue Hospital, New York (to control the spread of such virus diseases as mumps and measles) are now being tested with highly favorable results. The Seamen's Bank installation in New York, scene of the discovery of triethylene glycol's anti-germ action, has been examined by hundreds of individuals representing health groups, drug manufacturers, insurance groups, health commissioners, tobacco manufacturers, and epidemic control groups from South America.

There are several important factors to be considered in making a glycol installation. It is necessary that the vapor be properly and continuously dispensed through the entire space to be treated, for the following reasons: (1) Fifty to 70 per cent of the glycol vapor dispersed into the air is lost rapidly by condensation on surfaces and air-borne dust particles. Further loss is caused by the exchange of air—opening doors or windows; (2) Aerial contamination of inhabited spaces is a continuous process, hence, bactericidal concentrations of the vapor must be present constantly; (3) The killing action of the glycol while very rapid for freshly expelled bacteria, requires some time for the dried microorganisms originating from secondary reservoirs; and (4) Since triethylene glycol has little tendency to diffuse by itself, thorough mixing depends on air currents which in most situations must be induced artificially. In an air-conditioning system, even distribution of the vapor is assured if the system has been properly devised. In existing buildings without air conditioning duct-work, separate ducts or several vaporizers may be used.

Since triethylene glycol has such a low vapor pressure (boiling point is 550° F.) it is necessary to use heat for vaporization. The temperature which can be employed is limited by the fact that this glycol begins to decompose when heated above 300° F. In order to obtain sufficient vapor at this relatively low temperature, extended evaporating surfaces must be provided. The glycol vaporizers now being made employ either this principle or that of boiling mixtures of glycol and water.

There are two installations of more than academic interest for theatre men. One of these is the Seamen's Bank, where a surprising improvement in the health of the personnel first focussed attention on the remarkable germicidal properties of TEG; the other is the Rivoli Theatre in New York, where the first commercial theatre application made its debut.

At Seamen's Bank, permanent triethylene glycol vaporizers have been installed throughout the air-conditioning system, augmenting the chemical's use as a dehumidifying agent. The central conditioning system consists of a double bank of air filters, dehumidifier, a concentrator that restores depleted glycol to full strength, refrigerating compressors that remove the air's sensible heat, blowers, necessary control elements and glycol vaporizers. Supplying 300,000 cubic feet of space, the system furnishes six complete air changes per hour at relative humidities of 48 to 52% and glycol relative saturation of 60 to 70%. Temperature difference is 12 to 15° F. on maximum days and 5 to 10° F. when outside dry-bulb temperature is 85° F. or less.

During winter months, 100% fresh air is filtered, humidified with steam, heated and sterilized before delivery to each of four separate zones. In summer, 65% recirculated and 35% fresh air is dehumidified, sterilized and cooled. Two Freon-12 condensing units (15 and 25 tons), serve a chilled-water system that cools the air. Twelfth floor offices are divided into two air-control zones: one supplied by two 3½-ton unit conditioners and vaporizers and the other by a central condensing unit supplying Freon-12 to window units in each of twelve offices. A fourth unit conditioner and vaporizer in the basement serves the safety deposit vault.

In its general aspects, the glycol vapor installation at the Rivoli Theatre in New York City is similar to the system at Seamen's Bank. Patrons react favorably to the treated atmosphere, commenting on the pleasant smell of clean fresh air, or referring to the protection afforded children by glycol purification. Even more enthusiastic are the Rivoli personnel who live in the purified air most of the week and who probably welcome the insulation from a constant bombardment of new germs at each show.

The cost of operation at the Rivoli, a large metropolitan theatre, for their glycol vapor installation—based on an 18 hour day—runs approximately $16.00 a month. In the average size theatre, this cost would be substantially lower, about $6.00 to $8.00 a month. These extraordinarily low figures make it possible for practically all theatre operators to provide their customers with germ-free air at no extra cost. Home was never like this!

Glycol vapor installations are beginning to appear in more and more moving picture houses as operators learn of the efficiency, the value and the remarkable economy in operation of these air purifiers. Among theatres now offering this service to the public (besides the Rivoli Theatre in New York) are: the Fox Theatre in Toledo, Ohio; and the Kearse Theatre, Charleston, West Virginia.

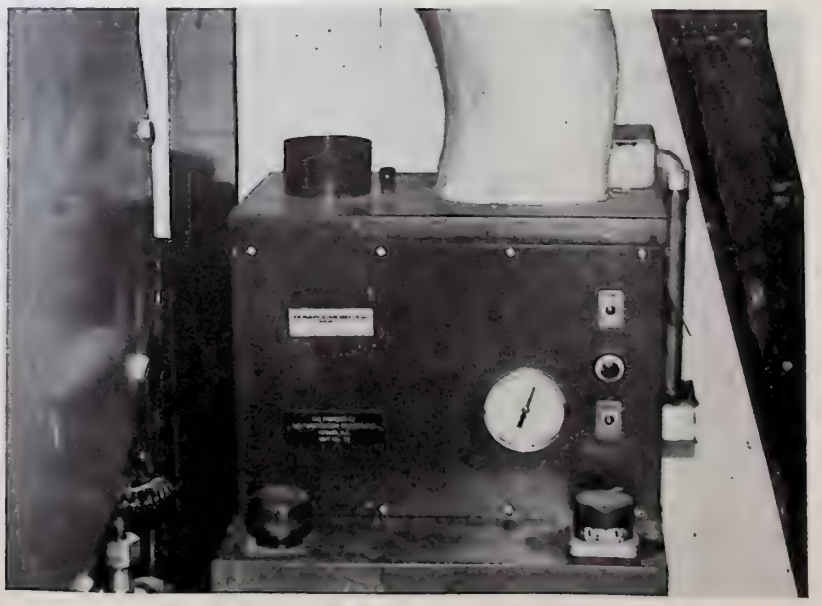
The motion picture industry is fortunate in having access to a germicide as potent and yet so adaptable as triethylene glycol. TEG's discovery as a germ-killer is comparable in a way to the discovery of penicillin, the sulfa drugs, or some of the other miracle medicines of recent years. It even has an advantage over these short-cut cures—it acts to prevent sickness and it does this so successfully that the theatre may eventually become a haven of purer air than even the great outdoor spaces offer. And all this on a modest budget, too.

For the interested operator who wishes to learn more about triethylene glycol, the painstaking research which verified its numerous capabilities and the engineering data governing its installation, there is a large body of reference material already and this is being added to at a rapid rate. According to all reports, triethylene glycol is one of those happy products that operators swear by and not at.

Acknowledgment

The editors wish to thank Air Purification Service, Inc., and Carbide and Carbon Chemicals Corporation, for their very kind assistance in contributing information on triethylene glycol for this article.

THE GLYCOL VAPOR INSTALLATION at the Rivoli, New York, and several other theatres throughout the country is simple and compact and may be made in the duct system or plenum chamber as desired.



The Problem of Air Distribution in a Theatre

A Round-table Discussion of A Specific Question on Heating and Cooling A Theatre by Forced Air

In July, 1947, the following letter from a consulting engineer was published in the "Question of The Month" department of the national trade journal, "Heating, Piping & Air Conditioning":

"An architect has presented a problem of heating and cooling a theatre by forced air. The auditorium is 51 x 188 in plan. The ceiling height is 25 ft. at the screen and 8 ft. at the rear, the seating being sloped accordingly.

"The requirements are for the use of sidewall outlets, with return air intakes located at the screen only, leading direct back to the fan. There is no provision for exhausting the ventilation or fresh air.

"My conclusion is that such a system, to both heat and cool this building, would be faulty and unsatisfactory, and I have declined to prepare designs on such a basis.

"The architect insists that other advice is to the contrary and that the system will be satisfactory in every way.

"I will appreciate comments."—T. L.

Interested readers were invited to comment. So prolific was the response to this invitation to controversy and of such high calibre that the correspondence touched off by the original letter should make interesting and informative reading for theatre men. The symposium on heating and air conditioning is presented below through the courtesy of Mr. C. M. Burman, Jr., Editor of "Heating, Piping and Air Conditioning."

S. R. L. opens the discussion, in the August, 1947, issue.

"T.L." indicates there is no provision for exhausting any air outdoors or for replacing it with new air from outdoors. He gives no information as to the volume of air to be handled or the design temperature of the air when cooling or when heating. I do not know enough about the project to criticize or endorse any part of it except the suggested locations for intake and outlet. I do feel able to lay down (for reaction by ever-critical readers) a few precepts, as follows:

Some Points to Consider

1) The air delivery volume should be not less than 2 cfm per sq. ft. of audience-occupied room. This includes aisles, columns, and other nonpaying areas inside the walls of the room. Less volume than this will require that the entering air shall be so much cooler than the air in the room at the level of the inlets, that complaint of drafts will be made.

2) Air delivery well overhead, along the side walls through several grilles (say one every 15 ft.) generally is not objectionable and such delivery from high-up grilles at the stage end so that the air currents face the audience, is usually acceptable. Air delivery through the ceiling in such a room has been found usually free from trouble.

The owners of the several thousand air conditioned U. S. theatres are well aware of the fact that the key to adequate, year-round results is in the mixing and distributing system that must be designed to fit each particular auditorium box. In only a a very few other structures are the design engineers faced with such large area conditioning and with such a concentration of patrons to be made comfortable. As a result the Editors of THEATRE CATALOG watched the following conflicting views of qualified experts with considerable interest and now present them for the thoughtful consideration of the owner or architect who may have a similar problem.

3) Removal of the air from such a picture theatre as is described, limited to grilles at the floor only, at the deep end, generally is unacceptable. The only exception is in very cold weather if there is no carrier of the heat except the air, in which case, unless there is means for the relatively heavy cold air to escape at the deep end, the floor down there may be cool. It has been well proved by experience that when we attempt to cool a room in hot weather, and have recirculating or exhaust openings only at the floor, we can be very sure of trouble.

The relatively heavy cool air, entering the room at, say, 60 deg. into a zone where the room air may be at 80 deg., or even warmer, tends to fall toward the bottom of the room and if there is an escape opening there, as for recirculation, the cool air will slide happily out, leaving the lighter-weight hot air in the room to rise toward the ceiling and become hotter—to discredit the designer. If, when cooling such a room as that described, the return air or exhaust air openings are overhead, the hottest air will skim off like dross in a lead melting pot, and the cool entering air will settle gracefully and gratefully around the people.

If—in such a theatre as that described—there are a few radiators down in the low zone, there will be no trouble if the year-around return air outlets are high overhead. It is not usually too difficult to arrange for seasonal or even for hourly switching of the air removal level from low-down to high-up.

If the room gets too warm, just open the overhead vents.

Use Outdoor Air

4) I know no area in the United States in which at some considerable time during each year, the untreated outside air is not delightful to feel and breathe. I know of no audience room in the United States in which this outside air—moved in copious quantities, and neither heated nor refrigerated—is not desirable in order to control temperature and odor. Any designer of a theatre should be excommunicated if he fails to provide ventilating equipment capable of introducing and removing 100 per cent of this outside air when no heating or cooling is needed. He should be shot at daybreak if he fails to teach the operator to introduce and remove enough outside air to dilute the characteristic and not always pleasant odor of too-warm humans.

5) In North Dakota we are called upon to redesign the ventilating of a very large and otherwise attractive assembly room because of failure by the designer to provide any openings (to say nothing of fans) for removal of spent, hot, smelly air. No appreciable volume of new air can enter unless there is a vent for escape of the original, old, wornout air. In Pennsylvania we are compelled to reverse the unfortunate original designs of a theatre ventilating system (and we should like to do so in many local theatres) where the entering air emerges through openings in the floor under "mushrooms" and escapes through the ceiling. The entering air currents in these cases are too intimately located with reference to the ankles of the audience.

In California we are correcting an exceedingly flagrant case of air introduction for cooling a theatre where the air supply was delivered into the room through grilles behind the audience. The ticket purchasers for years have emerged as nervous wrecks following fear of a cold due to the impact of the cooling air on areas of their bodies, from directions that their bodies are not trained to accept.

Incorrect Equipment Location

In Chicago we are spending a lot of dollars to correct a case in which the designer filled with machinery the basement under an otherwise attractive and useful place of assembly. There are nine fans and electric motors, 12 pumps of various kinds, and hundreds of feet of hot pipes under this room, with only a thin concrete floor as a barrier. Each machine tells the audience of its coming on and going off and the audience suffers from the hot-foot disease due to the very warm floor.

That reminds me of another large theatre that for years endured under its

floor an extensive electric substation full of switches, motor-generator sets and the like. I helped abolish that one.—S.R.L.

J.A.E. philosophizes about the ethics of the situation and architects before attacking the problem.

The question from "T.L." in the July issue on return air intake location in a theatre interests me for two reasons: the first is because of what might be termed the ethics of the situation, and the second is the technical problem involved.

Question of Ethics

Regardless of the problem involved, I agree heartily with "T.L." in that he has refused to prepare a design on a basis dictated by others, when he believes such a design is faulty. Consultants daily are confronted with this same problem, usually forced on them by the desire of architects to avoid changing their designs, failure of architects to understand the art of air distribution, failure to provide sufficient space for equipment, and because of the client's natural desire to cut costs.

I do not mean that the architect should be required to change his basic design at the whim of the mechanical consultant. Usually, a little cooperation is all that is required. One of my most pleasant associations is with a well known firm of architects, which calls me in during the preliminary stages of a project. By both of us realizing the problems of the other, we have been able to serve the ultimate client to far better advantage than if one of us had been dogmatic in refusing to see the requirements of the other.

I appreciate the normal desire of the client and the architect to keep the cost of mechanical equipment as low as possible. However, it is not appropriate to construct a fine building, regardless of cost, and then limit the mechanical equipment to a point that it performs its function maybe 50 per cent of the time. It is easy to design an air conditioning system that will perform at guarantee under maximum design conditions. However, it is another story to make that same system do the work under intermediate conditions. The architect should properly leave this to his consultant, or if he does not have proper confidence in the consultant, he should get another one.

Object to Air Currents on Back

In regard to the problem of "T.L.", based on the size of the theatre, it appears to have capacity of about 1200 seats. In other words, this does not appear to be a "neighborhood theater," but possibly a first run house. If so, I believe a little refinement over the small job would be in order.

My experience with theatre work has indicated that most patrons will object to air currents on the back of the head and neck, as would probably be obtained with all of the return air intakes at the screen. However, for heating work, it would be desirable to return part of the air at the screen. On the other hand, unless this job is located in a cold climate, the heating requirement is probably small, particularly if the house can be pre-heated before the show starts.

Personally, I do not like side wall outlets in a theatre, preferring overhead distribution. Generally the cost of the distribution system is lower, and certainly it is more effective. With this type of distribution, and with the sloping floor, it appears that mushrooms in the floor, or other type of floor returns, would be a simple solution. Low side wall returns might be the answer. At any rate, I would recommend that part of the return air be taken at the screen, or near the front of the house.

For reasons of economical operation, I would suggest that the equipment be arranged to handle all outside air for the intermediate seasons when outside conditions would be satisfactory under light loads. This certainly would require a separate return air fan, arranged for returning the air to the equipment, or exhausting 100 per cent.—J.A.E.

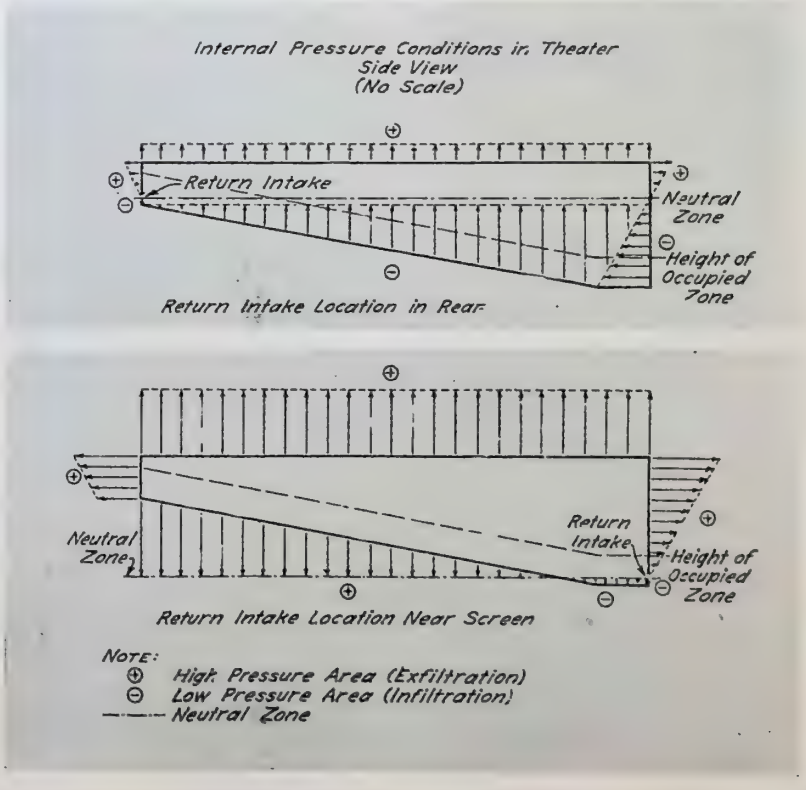
On the basis of his experience, E. G. submits another solution of the original problem. The three following discussions are from the September HPAC.

To accomplish efficient air distribution in a theatre air conditioning job, it is essential to obtain temperature equalization in the occupied zone and to prevent infiltration of non-conditioned outside air.

Even though the air supply outlets may be well selected and installed, proper air distribution is difficult to obtain in the area near the screen, where infiltration is most likely to originate from the space behind and above the stage. In this section the level of the occupied zone drops considerably below that of the rear of the theatre—17 ft. in the present case. By locating return intakes in the rear of the theatre (Fig. 1), the neutral pressure zone is raised to such an extent that non-conditioned air will enter near the stage and cause an excessive temperature variation between front and rear of the space. If such infiltration is minimized by solid construction of stage and stage loft, air stagnation will result and cause discomfort due to uneven room temperatures and stuffiness. This applies to operation of the heating as well as the cooling cycle. Further aggravation of this condition would be caused by operating exhaust ventilation with intakes in or near the ceiling during periods of occupancy. (Obviously such ventilation would be advantageous and desirable before and after shows to remove vitiated air.) By installing return intakes at the lowest possible level—near the screen (Fig. 2), infiltrated air is removed at its source. The neutral pressure zone is lowered sufficiently to keep infiltration at a minimum and air stagnation is avoided throughout the entire occupied zone.

The company I am associated with has had considerable experience with air distribution problems as applied to theatres, and as a result we have come to the conclusion to insist on extracting a large portion or the entire amount of return air through intakes located near

FIGURE NO. 1 and FIGURE NO. 2



the stage at the lowest level where installation may be practical. In this respect, therefore "T.L" is at variance with the principles of air distribution and the results of our experience.

On the other hand, he is right when criticizing the absence of any provision for exhaust ventilation and—if I understand correctly—for fresh "make-up" air. In order to provide sufficient internal pressure in the enclosure to lower the neutral zone even below floor level, more air must be supplied than is returned to the air conditioning unit. The excess air may then exfiltrate either into the theatre lobby or to the outside, and fresh air must be used to make up for such exfiltration losses. A ratio of 75 per cent return air and 25 per cent fresh air will usually produce satisfactory results.

Another important aspect of this problem is proper selection and location of air supply outlets in the rear of the theatre, due to the comparatively low ceiling height and the (presumably) large amount of air to be handled. If ceiling air distribution is not possible for structural reasons, wall type diffusers may be required to accomplish draftless air distribution in that section—E.G.

N.F. suggests a new layout—an air tunnel down middle or side of house.

It appears from the general information given by "T.L." that a theatre 51 ft. wide x 188 ft. long and with a ceiling height at the rear of 8 ft., sloping down to 25 ft., that sidewall outlets would never give satisfactory air distribution.

These sidewall outlets would have to have a blow of 25 ft., 6 in. Even breaking these up into many small units, the drop for that length of blow would be around 7 ft. and the air would surely impinge on the faces and bodies of the occupants.

It is my opinion that a much more satisfactory layout, as far as supply outlets are concerned, would be to locate them down the center of the ceiling. The use of, say, four ceiling supply outlets would make for a good distribution without the danger of objectionable drafts.

As far as the return air is concerned, there has never been any definite information (to my knowledge) that establishes any particular location as being the most satisfactory solution for all returns. However, for winter use, there is a definite advantage for the stage return grilles, as there is a natural tendency for colder air to settle toward the front, which is taken up by these grilles—thus preventing cold pockets in this area.

I used the following returns in past experience with very good results and I believe this scheme could well be adapted for this installation:

In theatres of this type where the floor is built directly on the ground, without basement space, we have dug a tunnel down either the middle of the house or on either side of the house. This tunnel is made of cinder, cement block, or tile pipe of proper area and was usually installed within a very short time without seriously disrupting operation, usually during the night. Into these tunnels we plugged either mushrooms or aisle type intake grilles.

I feel that the above suggestion, which I have found many times in many installations operates completely satisfactorily, would be a good solution for "T.L.'s" problem.—N.F.

R.R. says, distribute air from rear of theatre.

I agree with the conclusion of "T.L." that the system as described to both heat and cool the theatre would be faulty and unsatisfactory. In my opinion, if the theatre is conditioned by the described system of using high outlets along the sidewall with returns along the front, two objectionable conditions would be repeated which have been found by experience in conditioning theatres in the past years. One of these conditions is that the rear of the theatre under and above the balcony will be inadequately cooled or overheated, depending upon the season. The second of these conditions is that of overcooling at the front of the theatre because the slope of the floor causes the cooler air to collect there, independent of the season. These conditions may be corrected by the application of the best practices in air distribution for theatres, with which "T.L." is apparently quite familiar. However, my suggestion for such a size theatre would be to distribute the air horizontally at a relatively high velocity from the rear of the theatre and high across the entire width. This high velocity movement of air would cause forward movement of the air high above the occupied area. Most of the air enters the system again at the rear for recirculation and the remainder goes out into the hall and lobby. This eliminates the objectionable conditions mentioned and does away with any possibility of having drafts striking the occupants on the back of the necks.

"T.L" also mentions that there is no provision for exhausting the ventilation or fresh air. In my opinion, this is quite acceptable as some of the air from the theatre auditorium should move from the rear of the auditorium through the hall and lobby onto the sidewalk, and this cannot be accomplished by having air exhausted directly from the theatre auditorium itself to the outdoors during the heating and cooling seasons. —R.R.

In November, the problem was still very much in prominence.

There was published in the July issue of HPAC a question from "T.L." (a consulting engineer) regarding air distribution in a theatre.

Because of the apparent interest in this question, "T.L." has prepared the accompanying sketch (Fig. 3, the dimensions varying somewhat from those given in July). He writes as follows:

"The problem is to heat and cool the theatre and lobby by side wall outlets. About 25 per cent of fresh air is assumed to be taken into the equipment.

"No provision is made to exhaust the fresh air thus taken in. No provision is made to circulate all outside air.

"All return air is to be taken into inlets at the stage and returned to the equipment.

"In my opinion, the requirements are such that efficient air conditioning, either heating or cooling, would be impossible. I therefore declined to attempt such a design.

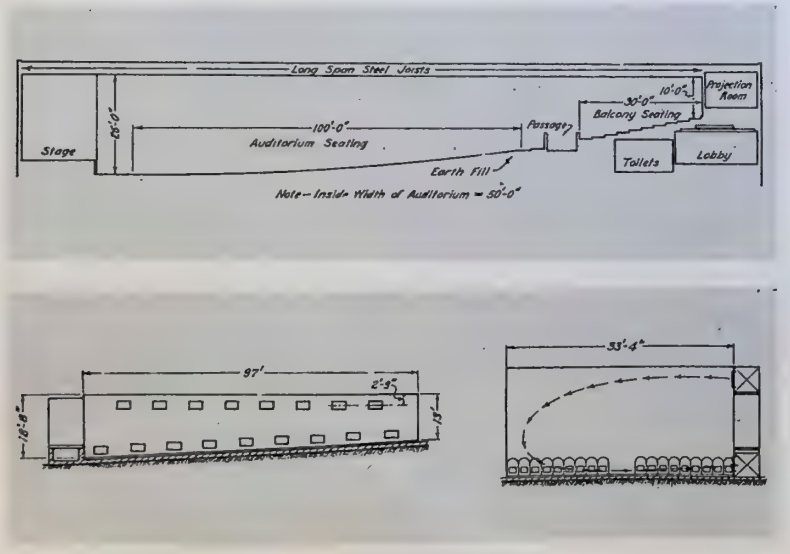
"The architect claims that 'experts' have assured him of satisfactory and efficient results. This is contrary to anything I might know about air distribution and the results actually desired or that should be obtained.

"Apparently this problem is of interest to a number of HPAC's readers. Their comments and suggestions are of real interest and value to me as well as many others."

G.T.L., of Buenos Aires, faced the same problem years ago.

I read with interest the question of the month about return air intake location in theatres in the July issue as I

FIGURE NO. 3 and FIGURE NO. 4



had the opportunity to project several special cases as to air distribution and return in theatres.

I think that air distribution from ceiling outlets is about the most perfect way this problem can be solved in theatres. At least, all theatres built in this city in the last years have been designed with ceiling outlets. With ceiling outlets assuring uniform air distribution the location of return air intakes is of secondary importance, although even in these circumstances return grilles located only below the stage do not give quite satisfactory results, as we had the opportunity to prove in one such case.

There are special cases, however—mostly in small theatres with other floors above the theatre where it is impossible to provide ceiling air outlets. In these cases good air distribution becomes a delicate problem and the location of return air intakes gains more importance in order to help to establish a satisfactory air distribution.

Some years ago we had to face a problem of a small theatre similar to that described by "T.L." The auditorium is 97 ft. long, 33 ft., 4 in. wide with 18 ft., 8 in. ceiling height at the screen and 13 ft. ceiling height at the other end. At one side of the conditioned space we found a passage which gave us opportunity to place a supply duct outside the longitudinal wall of the theatre with side wall inlets for air distribution. After careful consideration we reached the conclusion that to assure satisfactory air circulation the main return duct would run parallel with the main supply duct but, of course, at a low level. Placing the return air intakes on the lower part of the same side wall where supply grilles have been placed and with a correct supply air velocity, the air will have to travel across the whole width of the theatre, returning at about floor level.

The sketches (Fig. 4) show the longitudinal and transverse sections of the theatre. It may be noted that return air intakes have been placed not exactly below supply grilles, but always between two supply grilles.

The job described was completed six years ago and furnishes year 'round conditioning to the theatre. In all these years not a single complaint has been received as to drafts or faulty air distribution.—G.T.L. (Buenos Aires).

G.S.C. thinks the job can be done satisfactorily.

In the original statement of conditions, the ceiling height at the rear of the theatre was given as 8 ft. This seems too low, and therefore our comments are based on an 18 ft. ceiling, which is more normal.

Further, no information is given as to the exposure of the building. Whether or not there are adjoining buildings which are heated or cooled or both makes quite a difference, particularly for those seats near the side walls. We have assumed that there are no adjoining buildings, since that is the more severe condition.

We are of the opinion that a year 'round conditioning system using side wall supply outlets and return air intakes located in the 2 ft., 4 in. rise in front of the stage can be designed to give fairly satisfactory, albeit not perfect, results.

Exhaust of Ventilation Air

"T.L." is concerned because no provision is made for exhausting an amount of air equal to that supplied for ventilation. It has been our experience that if the main supply fan is designed for ⅛ to ¼ in. static pressure above that calculated as required and if the return air duct and the outside air duct are equipped with volume dampers which can be relied upon to control air flow, by adjusting the return air and outdoor air dampers, the proper amount of O.A. will be introduced into the conditioned area which will in turn force out the required amount through entrance doors, window crack, etc. In very tight construction it may be necessary to provide vent openings to the outside to facilitate this exhaust. Such design will also keep infiltration to a minimum.

Further, the ventilation which is required by the projection room, and more than likely by the restrooms, can be designed to act as exhaust from the main theatre area. Also, under conditions where the heat load of the projection or restrooms is small, the amount of heating or cooling required can be supplied by the air drawn through these rooms as it is being exhausted from the theatre. Generally such design is practical if the resultant projection or restroom temperatures are not more than 3 to 5 deg. warmer or cooler than the theatre proper.

So much for the exhaust problem, "T.L."'s other worry seems to come from the fact that all of the R.A. is taken from the stage end of the theatre. Assuming 20,000 cfm. supply air, 7500 cfm. outdoor air, and 12,500 cfm. return air, there will be definite air motion both toward the return intakes and also the entrance doors, projection room, and restrooms. If there is the normal aisle between the front row of seats and the stage rise, there should be no discomfort from air flow over the patrons. For if all of the R.A. crosses the aisle within 3 ft. of the floor, using the width of the theatre, there would be an air velocity of 82 to 83 fpm. Actually, assuming an aisle width of 8 ft., the air flow at the first row would be taking place through a cross-section at least 45 by 8 ft., which would result in a velocity of 35 to 36 fpm. The return air grilles should extend more or less completely across the stage rise. By using the space below the stage as a return air plenum and letting the return air intake grilles merely empty into this space, and then having the return air duct draw from this area at the most convenient location, the ductwork can be simplified at no disadvantage to performance.

So, it seems to us that the problem of exhaust and return air can be met with fair satisfaction. To us the real problem is to keep uniform conditions throughout the area, particularly for the one or two seats nearest the side walls. At this location the circulation due to the supply air diffusion is least effective. On the heating cycle, if there are to be any cold drafts down the wall due to heavy heat losses, they will be most severe at this point; on the cooling cycle this is the location most likely to be in an eddy and therefore slightly warmer. However, since the length of blow of the supply outlets is only 23 to 25 ft., half the theatre width, the outlets will be comparatively small and rather closely spaced. Therefore the use of outlets giving high diffusion effect should induce sufficient air motion to make even the seats nearest the wall not uncomfortable.

In short, by taking advantage of the projection room and the restroom exhaust system to stimulate air movement in the rear of the theatre, and by using a fan which can introduce the required amount of outside air against a slight internal pressure, thereby getting the required exhausting through the entrance, etc., we think that the system can be designed to be satisfactory. At the same time we agree that this is not the best layout, and it seems unfortunate that the system cannot be designed for maximum performance.

Disagrees With "S.R.L."

We cannot agree with "S.R.L." that return air intakes near the floor will "be sure of trouble." It is our experience that low return air intakes are quite satisfactory except when there are appreciable amounts of smoke, etc., to be removed. Since most supply outlets tend to create an eddy area about one-third of the distance from the grille to the floor, under such smoke conditions an exhaust or return air intake drawing from this intermediate level is very effective, particularly with high ceilings. Contrary to "S.R.L.", the use of overhead return air intakes can definitely short circuit air away from the room.

The use of 100 percent outside air during those seasons when it is the proper temperature is very effective if the controls are intelligently and thoroughly used. However, this requires either a very competent operator "on the job" or a fairly elaborate control setup. When such 100 percent outside air operation is used, a secondary positive exhaust system is generally required—G.S.C.

With this letter, the symposium on air distribution in a theatre came to an end in the November, 1947, issue of "Heating, Piping and Air Conditioning." To Editor C. M. Burnam, Jr., and to the anonymous participants in the symposium, the editors of THEATRE CATALOG extend very grateful acknowledgments. It is often true that the experts never agree, but it is also true that a wealth of information is generated in the course of the argument. The discussion presented above falls into both categories.

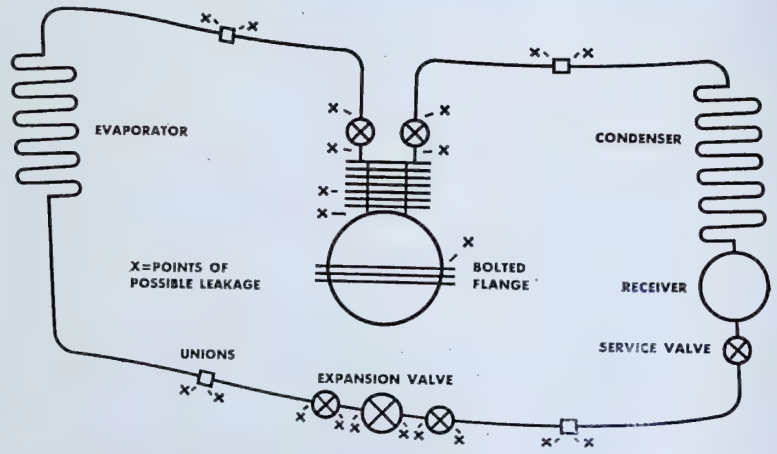
Maintenance Tips for Users of Freon-12

Five Series of Suggestions for Theatremen In Handling the Refrigerant and Cylinders

Careful attention to the maintenance of refrigeration systems will, as with other types of machinery and equipment, prolong life and usefulness. Previous editions of this publication have well covered the purely mechanical angles, with but passing reference to the refrigerant.

To close the hiatus in this field, the following maintenance suggestions are offered. Because Freon-12 is most widely used as the refrigerant in theatre air-conditioning systems—and the use is becoming more and more general—these suggestions refer only to this material, provided by Kinetic Chemicals, Inc.

It should be remembered that, in a very real sense, the gas cylinders are a part of a refrigeration system. Accordingly, care in handling and using cylinders of Freon-12 will repay the owner, by helping him to prolong their life and maintain high operating efficiency of the system. And, of course, after being sure that all the Freon-12 paid for is completely evacuated from the cylinder, return it promptly.



LEAKS IN REFRIGERATION SYSTEMS, particularly the small ones, are often difficult to detect. Look for leaks at unions; at flanges where bolted together; at cylinder heads and valve plates; on either side of valves, fittings, gaskets, and threaded connections. Time can often be saved by looking for an accumulation of lubricating oil which has leaked out. In the drawing, x's indicate points of leakage.

Leak Detection

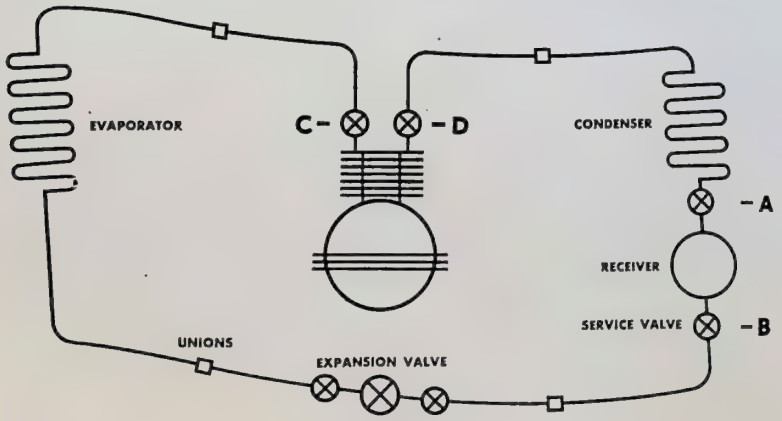
Leaks in refrigeration systems, particularly small ones, are often difficult to detect. Look for leaks at unions; at flanges where bolted together; at cylinder heads and valve plates; on either side of valves, fittings, gaskets, and threaded connections. Time can often be saved by looking for an accumulation of lubricating oil which has leaked from the system. These other suggestions will help.

(1) Use a Halide lamp to detect and positively locate the leak. When testing, the Freon-12 vapor escaping from the leak will cause the high temperature flame of the lamp to change to a bright green color. Use of the Halide lamp is the easiest and best method of detecting the most minute leaks.

(2) Close valves on both sides of leak, thus isolating it; relieve pressure in line by "cracking" or loosening the nearest connection, and remove gas from line to be repaired by blowing it out with air. Repair leak according to the problem at hand.

(3) Fill repaired section with inert gas—such as carbon dioxide or nitrogen—under pressure. Use about 10 per cent Freon-12 as a tracer and test with Halide lamp as covered in detection. Do not use compressor to develop air pressure in line. For accurate testing, avoid lighting Halide torch in the room if filled with Freon vapor. Do not fill test lamp with fuel in a room containing Freon, as the fuel will absorb the gas and give inaccurate readings.

WHEN OPERATION of the equipment is not required, these important points on Freon-12 charged systems should be checked. When the receiver is of sufficient capacity, valve B is closed and the refrigerant pumped into the receiver, after which valve A is closed. If the receiver capacity is insufficient, valves A, B, C, and D should be closed to isolate the refrigerant throughout the system.



Shutting Down Systems

Check these important points on shutting down Freon-12 charged systems during periods when operation of the equipment is not required. These tips will help you conserve Freon-12, save you time, trouble, and expense.

(1) Determine the capacity of the receiver. Make certain it will hold the entire charge of Freon-12 and still have a void, or gas space, which is 10 per cent of the receiver's volume. This extra space is required to allow for expansion of the liquid refrigerant at higher temperatures, and eliminates the possibility of bursting the receiver because of hydrostatic pressure.

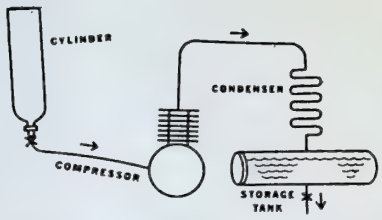
(2) When the receiver is of adequate capacity, close service valve B. Operate the compressor, to evaporate all liquid in the line between valve B and valve C. Freon-12 then condenses, flows into receiver. Reduce back pressure to from 2 to 5 pounds gauge reading, then close valve A.

(3) When the receiver is not of adequate capacity, close valves A, B, C, and D to isolate the refrigerant in separate sections of the system.

(4) Test all valves to guard against leaks during the shut-down period, as described in the previous section.

Emptying Cylinders

Today, the importance of completely emptying cylinders of Freon-12 cannot be over-emphasized. Haphazard methods



EMPTYING OF CYLINDERS is outlined in this illustration, showing the course of the refrigerant from the cylinder, to the compressor and condenser, and finally to the Freon storage tank.

may result in loss or waste of as much as 6 per cent of the total charge in a standard 145-pound cylinder.

Close observance of the following suggestions will enable you to obtain full weight from every cylinder.

(1) Place the Freon-12 cylinder with hood on scale to obtain gross weight.

(2) Remove cylinder from scale and place it in a bucket or barrel of hot water not exceeding 125° Fahrenheit.

(3) After cylinder is thoroughly heated to increase pressure, remove from hot bath and invert cylinder. Connect line to valve, open valve, and discharge all liquid Freon-12.

Caution: Never subject cylinder filled with compressed gas to a temperature above 125° Fahrenheit. Never permit a direct flame to touch the cylinder or fuse plug.

(4) Connect the cylinder to the suction line of the compressor and evacuate the cylinder to 28 to 29 inches of mercury for a period of 20 to 30 minutes. The Freon-12 vapor removed from the cylinder is compressed and condensed and discharged into a storage container or charging line.

(5) When the cylinder is completely evacuated, close the valve tightly, replace hood and again weigh the cylinder.

(6) Subtract tare weight from gross weight of cylinder. The difference represents the net weight of Freon-12 removed from the cylinder. Compare net weight with that shown in column 6 of anaylsis report accompanying each shipment of Freon-12. This should be 145, 25, 10, or 4, depending upon capacity of the cylinder. If weights differ, evacuation of cylinder is incomplete.

(7) If determination shows that evacuation is not complete, repeat operation No. 4.

Method of Charging

The correct way of charging a system using Freon-12 is neither difficult nor complicated. These suggestions will help you.

Before undertaking to charge a refrigerating system, it is recommended that all threaded connections and valve stem packings on the liquid line from cylinder to charging unit be thoroughly checked for possible leaks. A Halide leak detector torch should always be used for this purpose. If leakage is evident, steps should be taken to eliminate the leak. Various types of connections, temperature, pressure, and time factors necessarily govern the extent to which losses due to leakage may occur. A previous section described in detail the proper methods of detecting leaks.

The cylinder of Freon-12 should first be weighed, with hood, to determine the gross weight of the cylinder and contents.

The cylinder is next removed from the scale, hood removed and lines connected from the cylinder to the system. Valves are opened and the system charged with the required amount of Freon-12.

Caution: To cause the flow of Freon-12 into the system, the pressure within the cylinder must be greater than in the system, but not more than 168 pounds gauge.

When the system is charged, valves closed, and cylinder disconnected from the system, the cylinder is reweighed with the hood. Weight of the cylinder subtracted from its original gross weight determines the net weight of Freon-12 charged into the system.

In making or breaking the liquid line connections between the cylinder and the system, losses approximately 2.5 per cent of the net weight of a 145-pound cylinder may result. However, the practice of using short connections between valves of the cylinder and system will aid in keeping losses low.

Handling Cylinders

The following suggesitions are offered to assist users of Freon-12 to obtain maximum efficiency from systems where this refrigerant is used.

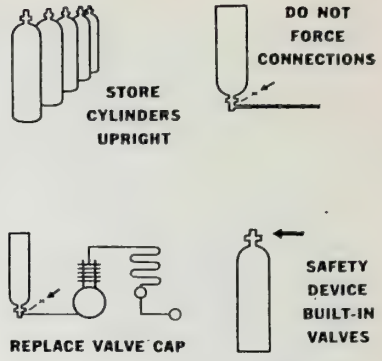
(1) To prevent dirt from entering the valve after charging, replace the brass cap on the outlet connection as soon as the valve is closed and the cylinder has been disconnected. This will forestall damage to the threads of the valve.

Close valve immediately after the cylinder is emptied to avoid drawing liquid Freon-12, air, or oil into the cylinder.

Cylinder valve can be protected by tightly securing hoods after cylinders are empty and ready for return.

(2) Cylinders of Freon-12 should be stored upright. Keep them in a cool, dry place away from salt or other corrosive elements. Rust damages cylinders. It may cause the hood to stick and may injure the valve.

(3) The connections on Freon-12 cylinders should fit easily and snugly. It



FOR HANDLING CYLINDERS, the four salient cautions are indicated in these sketches. Considering cylinders as a true part of the system will add to their life and satisfactory operation.

is unwise to force them. Threads on the fitting should be the same as those on the cylinder valve outlet. Stripped threads cause leaks, and valves cannot be repaired.

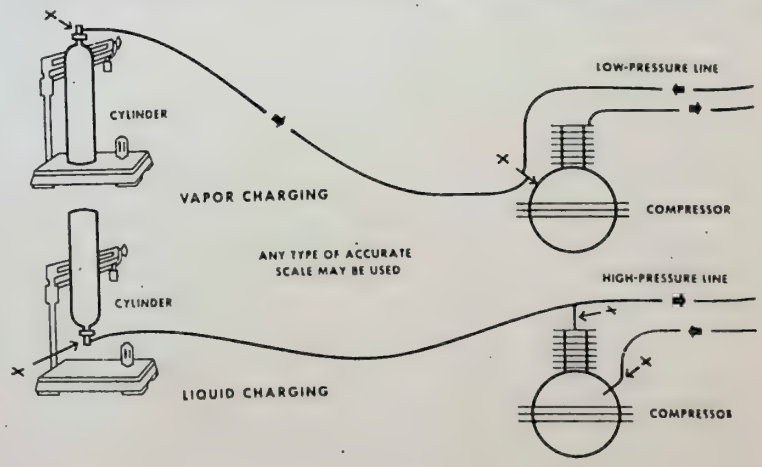
When the cylinder is connected to the system, the valve should be opened slowly. Only those tools or wrenches approved by compressed gas manufacturers should be used. Hammering valve stems in opening or closing may cause damage to the valve or system connection and lead to unnecessary repairs and the loss of Freon-12.

(4) Freon-12 is supplied in cylinders with valves containing built-in safety devices. To insure proper function of these safeguards, users are cautioned against tampering with the valves and fuse plugs.

(5) Cylinders should be protected against cuts or abrasion. Cylinders should never be used for rollers or supports, since they are not designed for these purposes.

(6) It is recommended that Kinetic Chemicals, Inc., be consulted if any doubt exists regarding the proper handling of Freon-12 cylinders.

THE CORRECT WAY of charging a system using Freon-12 is neither difficult nor complicated. The two general methods—vapor and liquid charging—are indicated in the drawing, the x's indicating important places to which attention should be given. In charging, as well as in closing down the system, all possible spots where leaks might occur should be checked, with a Halide leak detector in case of doubt.



A Different More Efficient Air Diffuser

Square or Rectangular to Conform to Interior Design
Modern Diffusers Provide 100% Distribution Control

Too much emphasis cannot be placed on this added box office attraction, "Correct Air Distribution." A diffuser that takes the conditioned air from the duct system and then distributes it among the patrons, draftlessly — silently — and as gently as falling feathers, adds to the comfort and enjoyment of the audience and helps increase box office receipts.

To assure correct air distribution, a diffuser should be designed to **eliminate drafts**, the most common complaint of theatre goers—**prevent dead spots** where patrons receive no benefit at all from the air outlet—**and control the volume of air** distributed to the conditioned area.

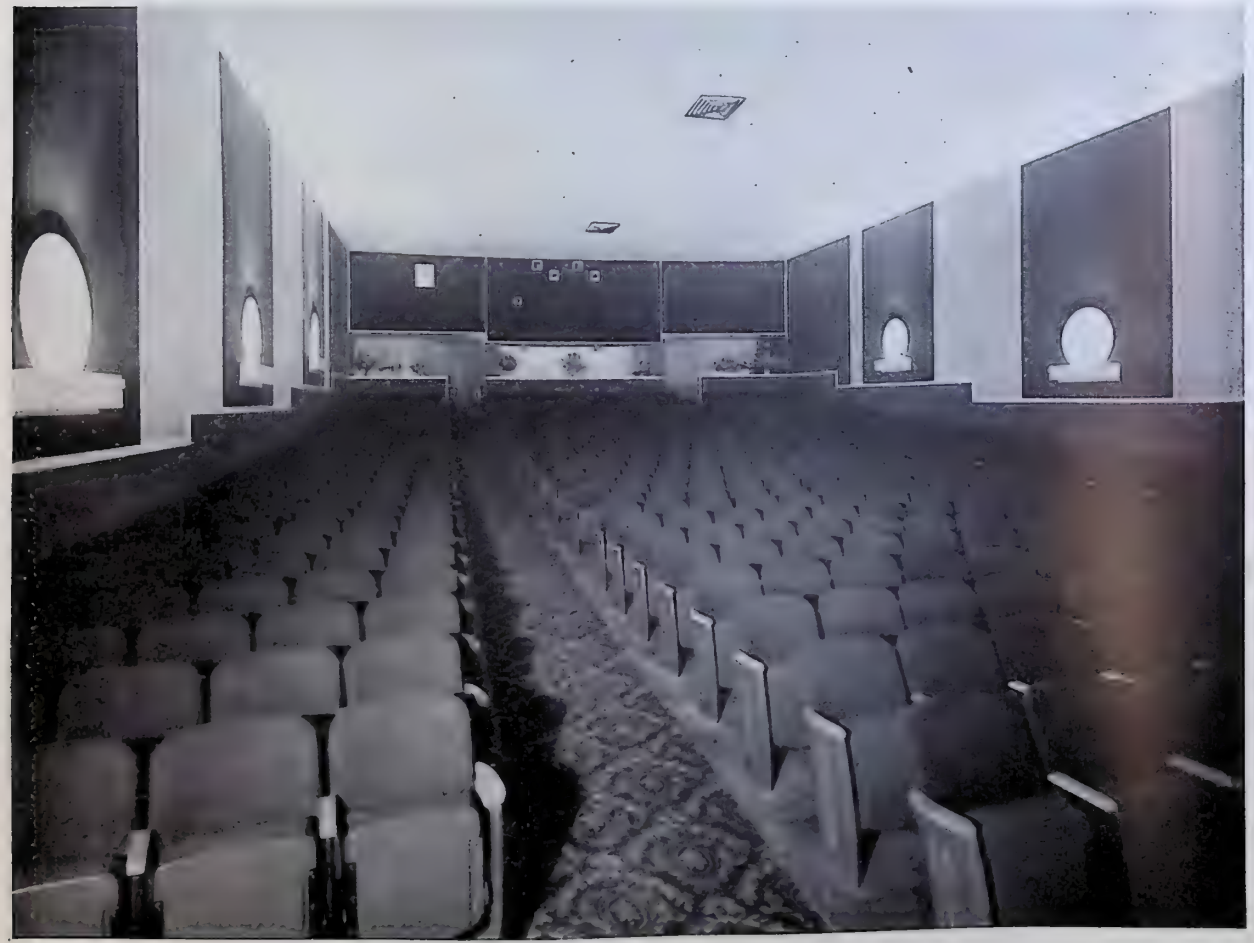
By T. A. HUGHES,
Air Devices, Inc., New York, N. Y.

One of the most important factors in any air conditioning system is correct air distribution. Without it, all the highly specialized engineering talent, their time and effort put into the planning of the system, become nothing more than a noble experiment.

If conditioned air is to be distributed uniformly throughout all places where it is wanted, the diffusers cannot be uniform in design—they must be adaptable to the shape and requirements of each region they serve. Incidentally, areas that are round in shape are found in comparatively few theatres. Square or rectangular diffusers are better suited to most applications because almost all the areas they are called on to serve are essentially square or rectangular.

The Agitair Type R offers a distinct contrast to all other types of diffusers. Square or rectangular in shape, the multi-orifice design of this air outlet is so arranged that the air is discharged through all orifices at uniform velocity, but at varying angles. Combining all the essential features required to give correct distribution of air, the patented construction of this diffuser assures

AGITAIR TYPE R DIFFUSERS, mounted in the ceiling of the auditorium of the Ludlow, Ludlow, Kentucky, provide four-way blow with 100 per cent control. The multiorifice design of this air outlet is so arranged that air is discharged through all orifices at uniform velocity but at varying angles.



100% diffusion pattern control and more rapid temperature equalization.

Designed by a group of engineers with more than 35 years' experience in the handling of air, the Agitair provides the architect and engineer with the only diffuser that is tailor-made to fit their design, instead of requiring them to make their design conform to the diffuser.

The architect or engineer specifies his requirements; the Agitair diffusers are then designed and manufactured to his specifications. These specifications include drawings showing construction, all physical dimensions and method of connecting the diffusers to the duct work. These drawings indicate areas in square feet, air velocities in feet per minute in the neck and at the point of discharge, and air pressure in the neck of the diffuser.

Diffusers are then assembled to meet the requirements, and to give one, two, three or four-way blow, with each side delivering a quantity of air directly proportional to the area it serves.

The fact that the air streams from the separate orifices are discharged at varying angles creates a high degree of turbulence in the combined primary air stream. The discharge velocity is sufficiently high to develop an aspirating effect that draws room air toward the diffuser, where the turbulence mixes it with the delivered air in 50/50 proportions. Three-way diffusers, moreover, draw air from one side in addition to that drawn upward from beneath the diffuser; two-way diffusers aspirate room air from below and from two sides. One-way diffusers perform much like side wall grilles, except that the velocity of the discharged air is dissipated more quickly because of the turbulence created by the Agitair vane design.

The aspirating and mixing action is checked by temperature readings taken at a 1 foot distance from the orifices. At this point, the temperature differences between incoming air and room air shall have been reduced by one-half, the manufacturer guarantees; and the remaining temperature equalization shall be completed before the blended air stream reaches the extremities of the space it serves.

To further emphasize the functioning of the Agitair, visualize a puff of smoke being drawn upward toward the diffuser. Here you see the mixing action of the room air and the primary air stream. The smoke coming in contact with the Type R diffuser, mushrooms out and clings to the ceiling until it has reached the end of the blow, where it gently feathers down without any noticeable air movement to cover the area it has been designed to serve. With the air motion within the zone of occupancy not more than fifty (50) nor less than twenty-five (25) feet per minute, there is no sudden icy blast—or drafts. The patented construction of the Agitair assures the distribution of draftless air and equalizes the temperature to avoid any cold blasts that might cause sudden chilling of patrons.

While its basic, patented construction permits the Agitair diffuser to be assembled in numerous patterns to give the diffusion required for areas of any irregular shape, still closer control is afforded, where needed, by directional louvres and dampering devices available for use with it.

The utmost in flexibility is thus available. For example, the Agitair diffuser need not be centrally located. If such placement does not agree with the decorative pattern, or if a beam is in the way, or if it is not convenient to run a duct to the center of a ceiling area, the diffuser can be designed for any location the architect wishes to specify.



THE OUTER LOBBY of the Madison, Covington, Kentucky, is amply and efficiently ventilated by Agitair diffusers in the ceiling. These also provide four-way blow and 100 per cent control.

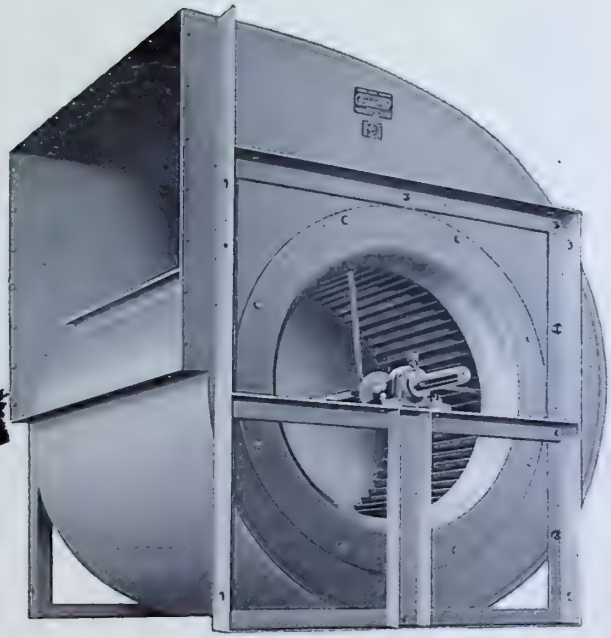
AGITAIR DIFFUSERS installed in the sidewall of the interior lobby of the Madison, Covington, Kentucky, control the distribution of air in three directions to assure noiseless-draftless ventilation.



NATIONAL THEATRE FANS

EASY TO INSTALL

ECONOMICAL TO OPERATE

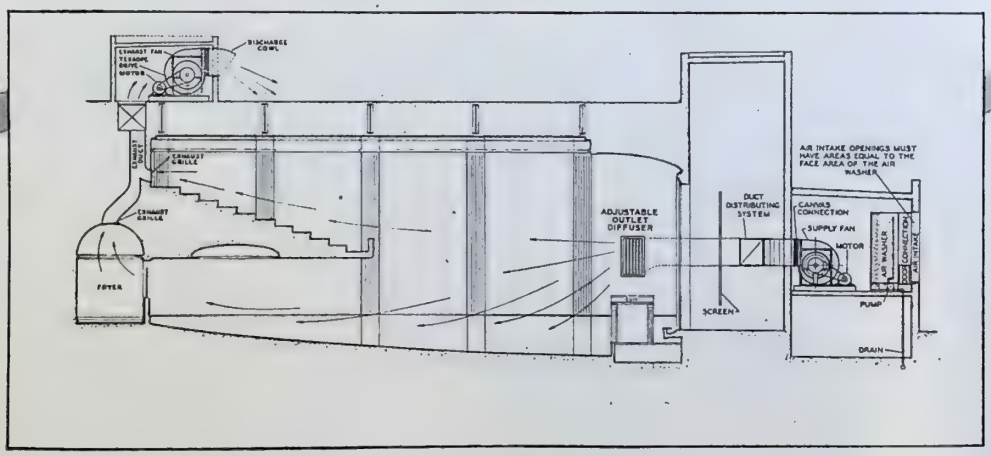


FOR COMFORT COOLING WITH AIR IN MOTION AT AMAZING LOW COST

For the refreshing, cooling effect of an ample, circulating supply of fresh, outdoor air, National Theatre Fans are the first step in comfort cooling. They are designed and built for theatres, are smooth and quiet in performance, durable, compact and capable of moving large quantities of air, year in and year out.

Write for Catalog No. 1129-24A

FAN AND AIR WASHER APPLICATION DIAGRAM



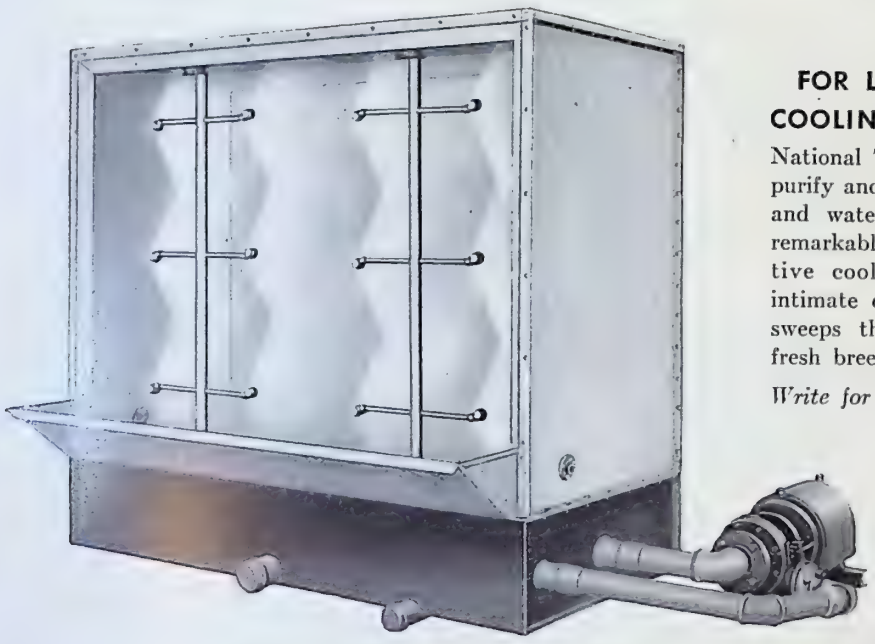
National Theatre Air Washers, used in connection with National Theatre Fans, form a complete, compact and economical method for theatre comfort cooling.

Distributed by

NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc.

A UNIT OF NATIONAL STANDARD THEATRE SUPPLY EQUIPMENT

NATIONAL THEATRE AIR WASHERS



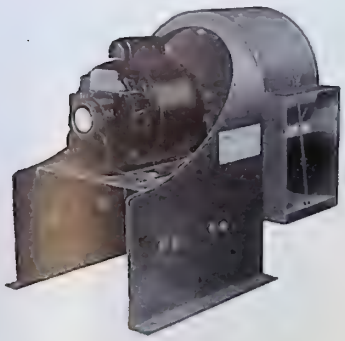
FOR LOW COST COMFORT COOLING WITH WASHED AIR

National Theatre Air Washers cleanse, purify and freshen the air, remove dust and water-soluble odors, and have a remarkable cooling effect (by evaporative cooling). Air is brought into intimate contact with water and then sweeps through the theatre like the fresh breeze that follows a rain.

Write for Catalog No. 1129-22A



PROJECTION ROOM EXHAUST FAN

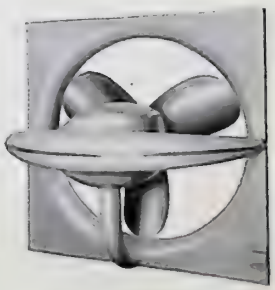


Utility Set with Aileron Control for duct systems.

Exhaust heat, odors and bad air from projection rooms, toilets, offices, locker rooms, lounges and dressing rooms with this compact, quiet-operating Utility Set. It is an ideal unit when ducts are necessary to handle air.

The Utility Set has a direct motor drive with steel housing and motor pedestal. All housings are adjustable for direction of discharge. Larger sizes are equipped with patented Aileron Control which provides a better, more efficient method of regulating the air flow. *Write for Catalog No. 1129-32 for complete data.*

GENERAL PURPOSE EXHAUST FAN



New Model A Ventura Exhaust Fan

Rid theatre foyers, toilets and other areas of bad air with a new Ventura Exhaust Fan. Placed on an outside wall, this efficient fan readily exhausts bad air by changing the air quickly and quietly—at a cost that's surprisingly low.

Note these outstanding features: Modern two-tone styling; square mounting panel, easily installed; streamflow motor enclosure; smooth, easy-to-clean surfaces; no exposed wiring; streamlined inlet for power savings; Aerocurve 3-blade propeller; Certified Ratings in accordance with Standard Test Code; sound rated. *Write today for Catalog No. 1129-34.*

Distributed by

NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bladwerth, Inc.

A UNIT OF NATIONAL STANDARD THEATRE SUPPLY EQUIPMENT

Westinghouse Electric Corporation

Sturtevant Division

HYDE PARK • **BOSTON 36, MASS.**

Westinghouse-Sturtevant Division manufactures a complete line of air conditioning, heating, ventilating and air handling equipment. Shown here is a selection of the complete line. Individual product catalogs are available where more detailed information is required on any item.

STURTEVANT PUTS AIR TO WORK

Equipment designed to "Put Air to Work" is available for all commercial and industrial buildings, to improve comfort and efficiency and to provide industrial process air conditioning. Applications range from the small ventilation and air conditioning systems to the large specially engineered installations.

ENGINEERING ASSISTANCE

Sturtevant offers unbiased engineering assistance in the selection of the correct product for the specific application. Many years of experience in the design and manufacture of these products combined with the benefits of close co-operation with consulting architects and engineers, assure you of reliable recommendations.

Offices and Distributors are located in all principal cities. Refer to your local classified telephone directory.

REFRIGERANT COMPRESSORS

Hermetically Sealed, Freon-12, refrigerant compressors are designed for air conditioning and industrial refrigeration applications requiring suction evaporating temperatures ranging from 10°F. to 50°F.

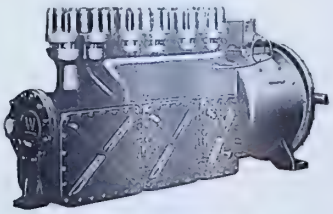
Westinghouse Special Features include:

1. Shaft seals eliminated.
2. Direct drive—no belts, pulleys and couplings.
3. Sealed-in mechanism.
4. Refrigerant-cooled motor.
5. Compact size and light weight.

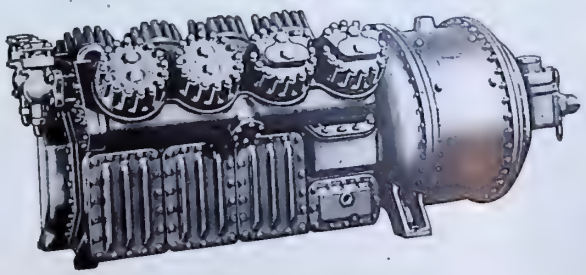
The hermetically-sealed compressors are reciprocating multi-cylinder in-line type in sizes 7½ to and including 60 horsepower; 90 degree V-type on the 2, 3, 5, 75 and 100 horsepower sizes. They are protected by manually reset high and low pressure switch. Driving motors are polyphase, refrigerant-cooled induction type. Motors are protected by thermal overload protection in the De-ion magnetic line-starters.

Mounting supports are available to permit mounting the compressor and suitable Westinghouse water-cooled condenser as a unit. Compressors are made in twelve sizes, ranging in nominal capacities of from 2 to 100 tons net refrigeration effect.

Type CLS Six-Cylinder In-Line Compressor



Type CLS Sixteen-Cylinder V-Type Compressor



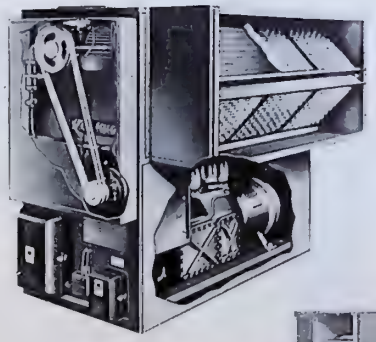
UNITAIRE® AIR CONDITIONING UNITS

THE CENTRAL PLANT TYPE Unitaire is self-contained, with all the component parts of an air conditioning system, designed especially for installation with supply and return air ducts. The Unitaire is assembled, piped, refrigerant-charged, wired and adjusted at the factory. Each is given a complete operating test to assure satisfactory performance when installed. All that is required is connection of water and electrical service and attachment to the duct system.

The condensing unit is a standard Westinghouse hermetically-sealed direct-connected compressor, with water-cooled condenser, isolated from the supporting structure by rubber anti-vibration mountings.

The Central Plant Type Unitaire is available with 7½, 10, 15, 20 and 25 horsepower compressors.

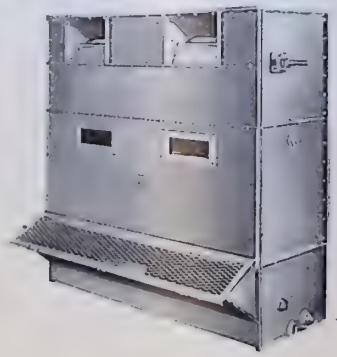
IN-THE-SPACE TYPE Unitaire is widely used in small stores, restaurants, office suites and similar establishments. Usually they are installed in the room to be air conditioned, but in many cases they are remotely located with ducts supplying one or more spaces with air conditioned air. Available in 1, 2, 3, and 5 horsepower sizes.



Type LU Central Plant Unitaire

AQUAMISER® EVAPORATIVE CONDENSERS

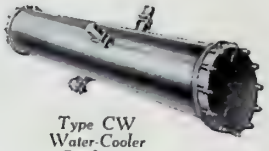
Where water is scarce or expensive, or its use or disposal restricted, the "Aquamiser" provides savings in water consumption. The Westinghouse Aquamiser is available in sizes to give a range of capacities from approximately 5 tons to 100 tons each, net refrigeration effect.



Type EVA Aquamiser Evaporative Condenser

WATER-COOLED CONDENSERS

Where sufficient water is available from city water supply, or where a cooling tower is used, the water-cooled condenser is economical and efficient. To match economically refrigeration load requirements, Westinghouse water-cooled condensers are available in 14 sizes, ranging in nominal capacities from 2 to 100 tons net refrigeration effect.



Type CW Water-Cooler Condenser

WATER COOLERS

Vertical, semi-flooded type, Freon 12, water coolers for the chilling of water for distribution to cooling coils in indirect air conditioning systems and for surface dehumidifiers. These efficient water coolers range in size from 5 to 110 tons net refrigeration effect.



Type LC Water Cooler

HEAT TRANSFER SURFACES

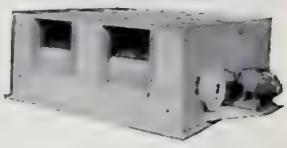
Direct expansion coils with patented refrigerant distributor, chilled water coils, steam and hot water coils are available in a great many sizes for all types of systems.



Type EA Heat Transfer Surface

AIR CONDITIONING UNITS

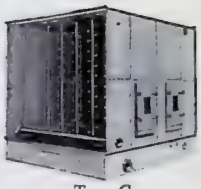
Two types are available—a horizontal type for ceiling suspension and a vertical type for floor installation. In the horizontal or vertical type, year-round air conditioning is accomplished by the installation of cooling and dehumidifying surfaces for summer, and heating surfaces for winter air conditioning.



Type AH Air Conditioning Unit

AIR WASHERS

Three types are available—Type H, with one bank of nozzles, used primarily for humidifying; Type C, with two banks of nozzles, used for evaporative cooling, humidifying and dehumidifying; and Type S, with one bank of nozzles, used for humidifying, especially where space is limited.



Type C Air Washer and Spray-Type Dehumidifier

FILTER-WASHERS

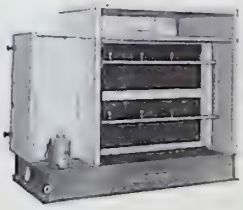
Self-cleaning filter-washers employ a bank of mineral wool, or glass fiber filter pads, in conjunction with water sprays to clean and humidify the air. Made in 72 standard sizes and to specifications.



Filter Washer

SURFACE DEHUMIDIFIERS

Available for either chilled water or directly expanded refrigerant, these wet surface units control accurately wet and dry bulb conditions in industrial and comfort air conditioning systems. Capacities range from 2000 to 50,000 cfm, with cooling capacities of 5 to 250 tons of refrigeration.



Unit Dehumidifier

VENTILATING SETS

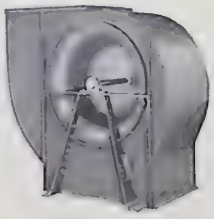
Direct connected Rexvane® Ventilating sets are small general purpose blowers or exhausters for ventilating and other applications of similar nature. Because of their low outlet velocities, they are particularly well adapted for ventilating storage rooms, toilets, projection rooms, etc., where it is necessary to use ducts to carry exhaust air to the outside. Larger sizes are manufactured in V-Belt style with centrifugal type fan.



Rexvane Ventilating Set

CENTRIFUGAL FANS

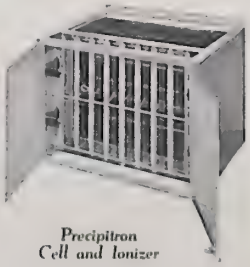
SILENTVANE,® FANS, are high speed, exceptionally quiet heating and ventilating fans engineered for installations where fan noise cannot be tolerated. Made in 23 sizes with rotors from 12¼" to 108¾" in diameter, they operate from free delivery to 6¾" water gauge static pressure. Capacities range from 700 to 467,000 cfm.



Silentvane Fan

PRECIPITRON® ELECTRONIC AIR CLEANER

Precipitron Electronic Air Cleaner is designed for installation in ventilating and air conditioning systems to remove air borne dust and dirt particles. Operating at an air cleaning efficiency of 90%, Precipitron removes the dirt that smudges and soils. Continued use in Theatres reduces the costs of redecorating and cleaning and provides a healthier atmosphere for the patrons.



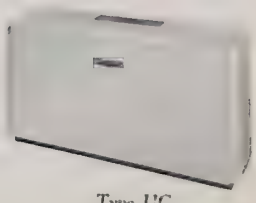
Precipitron Cell and Ionizer

UNIT CONDITIONERS

Provide year-round conditioning-cooling-dehumidifying for individual rooms. For cooling, the unit is supplied with chilled water at a suitable temperature. For heating, hot water is circulated through the unit. Air circulation and air cleaning is accomplished by the unit throughout the entire year.

Unit Conditioners may be used in conjunction with a central ventilating air system to recirculate and cool the air conveyed to a room or to cool and dehumidify the air recirculated in the room.

Capacities range from 300 to 700 cfm. and from 5400 to 16,200 btu per hour.



Type UC Unit Conditioner

For 1949

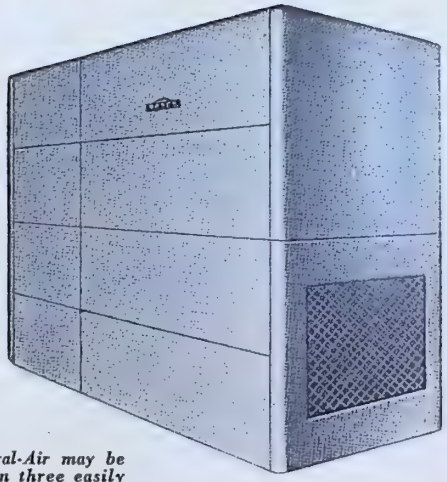
BAKER

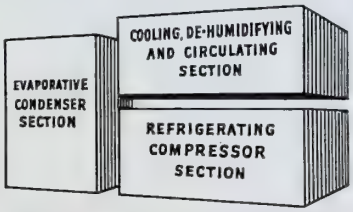
presents

THE NEW CENTRAL-AIR

A complete, packaged air conditioning unit in capacities up to 40 tons

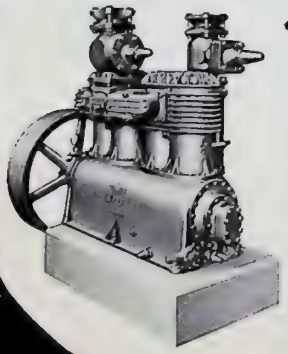
Ideal for theatre owners who want the benefits of truly modern, central-station air conditioning without the high engineering and installation cost of a custom system. Compact and scientifically designed, the Central-Air provides the year-round comfort that contributes so greatly to profitable theatre operation. In Summer it cools, de-humidifies and circulates air. During the Spring and Fall it can be used for fresh-air circulation. And in the Winter, with the addition of heating coils, it may be used as an efficient heating unit. Before air conditioning your theatre or modernizing your present system, get complete details on this outstanding new unit.





The Central-Air may be shipped in three easily assembled sections when small entrances make it impractical to handle the unit complete.

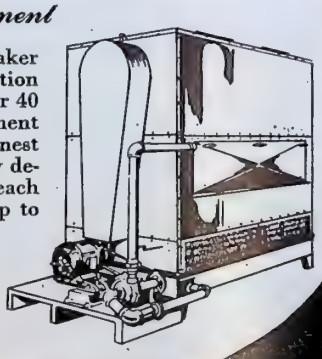
FOR CUSTOM-BUILT SYSTEMS—***A full line of highest-quality compressors, condensing units and auxiliary equipment***



In hundreds of theatres from coast to coast, Baker air conditioning has won a remarkable reputation for performance and reliability. Backed by over 40 years of experience in manufacturing equipment of premium quality, Baker today offers the finest line of machines in its history. Each is skillfully designed to do its job superlatively well . . . each is built with the highest order of workmanship to assure long years of trouble-free service.

Freon Compressors and Condensing Units up to 60 h.p. capacity for single or multiple installations.

Evaporative Condensers and auxiliary equipment to meet the particular requirements of every job.

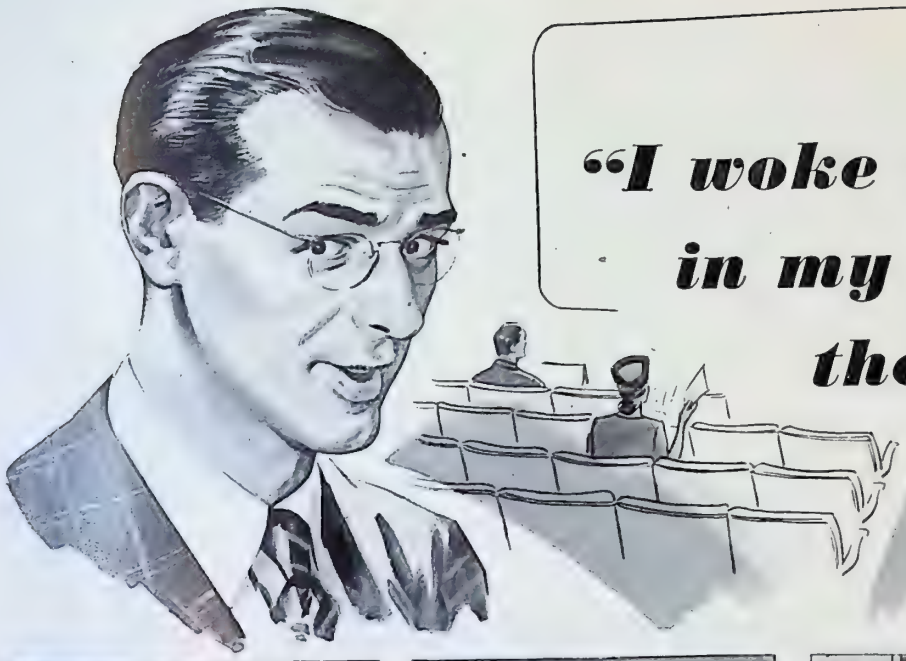


BAKER REFRIGERATION CORPORATION

(Formerly BAKER ICE MACHINE CO., INC.)

General Offices: South Windham, Maine

Factories at Omaha, Nebraska *and* South Windham, Maine



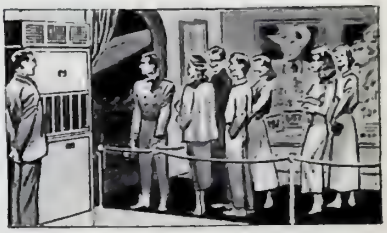
"I woke up in my own theatre!"



"Business was bad. I was booking the best pictures available but people still were going across the street to my competitor. I couldn't figure what was wrong. Then one day I took a seat among . . .



. . . "the patrons, and watched and listened. The woman in front of me was fanning herself. 'Isn't this heat terrible,' she muttered. 'I'll never come in here again!' Right then I WOKE UP!



"Yes, lack of air-conditioning was wrecking my business. I called the local Airtemp dealer, and had their 'Packaged' unit installed. Just 5 days later I had a 'standing-room-only' crowd!"

CHRYSLER AIRTEMP
DIVISION OF CHRYSLER CORPORATION

Certainly YOU, too, want air-conditioning . . . and for best value for your money, be sure it's *Chrysler Airtemp*. They are factory-assembled, factory-tested, backed by 12 years of proved dependability, and approved by Underwriters' Laboratories, Inc. Airtemp units deliver perfectly-regulated, draft-free cooling —quietly and at a low cost. Easily installed—no complex duct-work. More Airtemp units are in use than any other make. Get further facts—mail the coupon or call your local member of Airtemp's nation-wide dealer organization today. (See Yellow Pages of Phone Book).

Chrysler Airtemp

"PACKAGED" AIR CONDITIONING
CENTRAL STATION SYSTEMS
HEATING AND COMMERCIAL REFRIGERATION

AIRTEMP DIVISION OF CHRYSLER CORPORATION
DAYTON 1, OHIO

Mail this coupon today!

AIRTEMP DIVISION OF CHRYSLER CORPORATION
DAYTON 1, OHIO

Send "Packaged" air-conditioning information to:

Name_____

Address_____

Phone_____

Kind of business_____

T C 3-49

TYPHOON PACKAGED UNITS *Revolutionize* THEATRE AIR CONDITIONING

A new conception in modern air conditioning for theatres from 250 to 1500 seats, Typhoon packaged units are setting records for economy from coast to coast. In day-after-day operation, under all conditions, Typhoon brings you every advantage of central plant cooling . . . PLUS low cost and low upkeep.

A cinch to install—no duct work required, just hook up electrical and plumbing connections and Presto! . . . your patrons have cool, dry, filtered air in summer—with comfortable heat in winter optional. There's an economical Typhoon plan for your theatre—write for it today.

Amazing Economy Now Possible!

SAVING IN REFRIGERATION: 25% less refrigeration needed since there is no loss in ducts or in cooling upper part of theatre.

ZONE CONTROL: Individual thermostats give even temperature throughout the house.

QUIET OPERATION: No interfering noises.

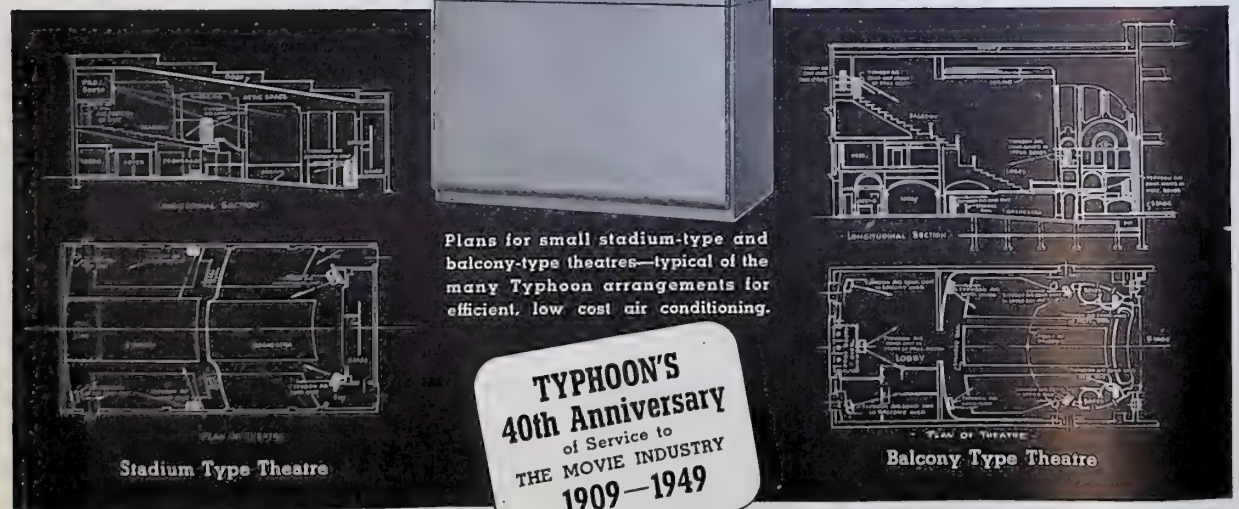


OVER-SIZED PARTS: to insure full-rated capacity under toughest operating conditions.

UNINTERRUPTED SERVICE: If one unit is being serviced, other units are not affected.

DEHUMIDIFYING ACTION: more effective removal of moisture because of high latent heat capacity.

10-Ton Unit
Designed Especially for Theatre Operation



Plans for small stadium-type and balcony-type theatres—typical of the many Typhoon arrangements for efficient, low cost air conditioning.

TYPHOON'S 40th Anniversary of Service to THE MOVIE INDUSTRY 1909—1949

TYPHOON AIR CONDITIONING CO., INC.

794 UNION STREET, DEPT. TC9 • BROOKLYN 15, N. Y.

THE ANSWERS TO THIS

Comfort-Cooling Quiz for Theater Operators

MAY SAVE YOU THOUSANDS OF DOLLARS!



Q: *Where has air conditioning been used with the greatest success?*

A: Why, in the theater, of course.

Q: *Doesn't theater air conditioning present many special problems?*

A: That's right. High ceilings, in and out movement of people and the necessity for keeping drafts at a minimum make the theater one of the most difficult buildings to air condition.

Q: *Where do theaters get their air conditioning equipment?*

A: No exact figures exist, but the sales records of the United States Air Conditioning Corporation indicate that at least half of all the theaters in this country use USAIRCO equipment.

Q: *How is it possible for one company to become that important in theater air conditioning?*

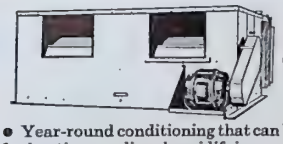
A: One reason is the special knowledge required in theater air conditioning. But the most important reason comes from the fact that a theater air conditioning system must be a profit-making tool. In other words, the initial cost, and operating and maintenance costs, must be in proportion to the theater potential.

In the answers to these questions, you have the main reason why theater operators from coast to coast look to the United States Air Conditioning Corporation for air conditioning equipment . . . why USAIRCO equipment can mean many thousands of dollars to you in savings and increased profits.

Whether your theater is large or small, you can rely on us to meet your requirements exactly, for the help you need to make theater air conditioning the money-making tool it should be. The USAIRCO line includes everything in cooling, heating and ventilating equipment—from complete systems for the year 'round air conditioning of the largest theaters to small, economical cooling units for the smallest theaters. They are products backed by the most advanced engineering in the field, and by a knowledge of the special problems of theater air conditioning that has resulted from a generation of service to the industry.

Let us help you. Full engineering cooperation will be gladly extended. Write for additional details.

UNITED STATES AIR CONDITIONING CORPORATION
Como Avenue, S. E., at 33rd — Minneapolis, Minnesota



UNIT AIR CONDITIONER

• Year-round conditioning that can be equipped for heating, cooling, humidifying and dehumidifying. Floor or ceiling models in 9 capacities up to 12,000 CFM.

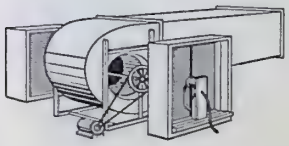


Cooling That Doubles For Heating!

REFRIGERATED KOOLER-AIRE

• The 2 in 1 system . . . gives the finest type of cooling and, with the turn of a switch, the best type of heating . . . a complete, pre-engineered packaged unit . . . available in nine sizes for large or small, single or multiple installations.

USAIRCO



Evaporative Cooling with MAT TYPE AIR WASHERS

• Gyro-Spray double mat type air washers used with a blower provide low-cost washed-air comfort cooling for theaters.

USAIRCO BLOWERS

• Made in types, sizes and capacities for all heating, cooling, ventilating and air conditioning applications.





USAIRCO AIR WASHERS

• Single, double and triple stage, with capacities ranging from 2,500 to 100,000 cubic feet of air per minute for cleansing, cooling by cold water or refrigerant, humidifying or dehumidifying.

And the FASTEST GROWING industry trade-weekly is . . .



$2.00 per year !

(S5.00 Foreign)

A FREE SAMPLE COPY on request !

. . . product of the same "theatre-wise" staff that annually publishes THEATRE CATALOG

JAY EMANUEL PUBLICATIONS, INC., PHILADELPHIA 7, PA., U. S. A.

MISCELLANEOUS SUPPLIES, NEW PRODUCTS, *and* SUPPLY DEALERS

1948-49

Theatre Supply Dealers of the United States

Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

BRADY MOVIE SERVICE, 1034½ S. 20th St., Birmingham. Telephone: 54-1362. PERSONNEL — Larry G. Brady, W. H. Pemberton, Tom Sappington, Jack Yerby.

AUTHORIZED DEALER

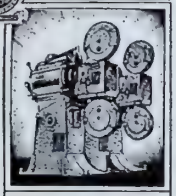
Distributors for

DeVRY Motion Picture Projectors and Sound Systems

DeVRY In-Car Speakers and "Brillante" Lenses

DeVRY 16mm Equipment

And a Complete Line of Theatre Equipment Supplies and Repairs



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

THE QUEEN FEATURE SERVICE, INC., 1912½ Morris Ave., Birmingham 3. Telephone: 3-8665. PERSONNEL—*Manager:* Miss Vivian Harwell. *Salesmen:* Lewis A. Waits, Russell L. Tyler. AREA SERVED—Alabama, Tennessee, Mississippi, Georgia, Northern Florida.

AUTHORIZED DISTRIBUTOR for

OPERA CHAIRS
LEEDOM CARPET
FLAT WHITE and BEADED SCREENS
COMPLETE DRIVE-IN EQUIPMENT
REFLECTOR ARCS and RECTIFIERS
GENERATORS
DRAPES - BLOWERS

Complete Theatre Equipment and Accessories

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

ALABAMA

BRADY MOVIE SERVICE, 1034½ S. 20th St., Birmingham. *(See display listing on this page.)*

THE QUEEN FEATURE SERVICE, INC., 1912½ Morris Ave., Birmingham 3. *(See display listing on this page.)*

ARIZONA

ARIZONA FILM SUPPLY CO., 33 W. Congress St., P. O. Box 5447, Tucson. Telephone: 3082. PERSONNEL—Geo. K. Diamos, Geo. N. Diamos, Spirro Diamos, Nick Diamos. AREA SERVED—Arizona.

ARKANSAS

THEATRE SUPPLY CO., 1021 Grand Ave., Fort Smith. *(See display listing on this page.)*

CALIFORNIA

MIDSTATE THEATRE SUPPLY, 1906 Thomas, Fresno 3. *(See display listing on this page.)*

BRECK PHOTOPLAY SUPPLY CO., 1969 S. Vermont Ave., Los Angeles 7. Telephone: REpublic 3151. PERSONNEL—*Manager:* J. E. Maguire. *Counter:* Stanley Gray. *Shop:* Louis Krenz. AREA SERVED — Southern California and Arizona.

JOHN P. FILBERT CO., INC., 2007 S. Vermont Ave., Los Angeles 7. *(See display listing on page 457.)*

MOTION PICTURE ACCESSORIES CO., 2200 S. Vermont Ave., Los Angeles 7. Telephone: PArkway 2894. PERSONNEL—*Owners:* James B. Dabney and James B. Dabney, Jr. AREA SERVED—Western and Coast states.

PROJECTION EQUIP. & MAINT. CO., 1975 S. Vermont Ave., Los Angeles 7. Telephones: REpublic 0711, ROchester 0711. PERSONNEL—*Owner and General Manager:* Louis M. Wutke (Emergency Phone WAlnut 0584). *Store Manager:* Earl F. Graff (Emergency Phone Federal 4491). AREA SERVED—So. Calif. and Arizona.

NATIONAL THEATRE SUPPLY, 1961 S. Vermont Ave., Los Angeles 7. PERSONNEL—*Manager:* Lloyd C. Ownbey. *Assistant Manager:* M. Bundy Smith. *Office Manager:* E. Braun. *Salesmen:* Glenn Slipper, Jack

* Listing not confirmed by Supply Dealer

THEATRE SUPPLY CO., 1021 Grand Ave., Fort Smith. Telephones: 7402—(Emergency Night) 4910. PERSONNEL—*Manager:* Chester L. Clayton. AREA SERVED—Arkansas, Northern Mississippi, Western Tennessee.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

Everything for the Theatre

GRIGGS SEATING
RADIANT SCREENS
KOLLMORGEN LENSES
GENERAL ELECTRIC HEATING and AIR CONDITIONING

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 278, 412, 413, 415, of This Volume.

SALES AND SERVICE BY EXPERTS!

MIDSTATE THEATRE SUPPLY, 1906 Thomas, Fresno 3. Telephone: 3-2455. PERSONNEL — *Owner and Manager:* Paul Wallace. *Field Service:* W. W. Williams. AREA SERVED—Central California and Nevada.

AUTHORIZED DEALER

Distributors for

DeVRY Motion Picture Projectors and Sound Systems

DeVRY In-Car Speakers for Drive-Ins and "Brillante" Lenses

Theatre Seating, Drapes and Curtains
Concession Supply Service
16mm and Visual-Aid Equipment and Service
Everything for the Theatre



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

See NATIONAL for ALUMINEX POSTER CASES

SIMPLEX SOUND AND PROJECTION

Equipment and Supplies for Every Theatre Need . . . . . .

BEVELITE LETTERS
DRIVE-IN EQUIPMENT
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Your RCA THEATRE SUPPLY DEALER **Has**

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

JOHN P. FILBERT CO., INC., 2007 S. Vermont Ave., Los Angeles 7. Telephones: PArkway 1196-97-98. PERSONNEL—*President:* John P. Filbert. *Secretary-Treasurer:* John P. Filbert, Jr. *Manager:* Don M. McLaren. *Salesman:* Bob Beretta. *Machinist:* Mack Lunt. *Shipping Dept.:* Robert Peterson. *Bookkeeper:* Ida K. Warner. *Stenographer:* Roses Salvaggio.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

• RCA SOUND EQUIPMENT • BRENKERT PROJECTORS • BRENKERT ARC LAMPS • RCA MOTOR GENERATORS • RCA RECTIFIERS • RCA SCREENS • MOHAWK CARPETS.

See Us for Drive-In Theatre Equipment

Theatres Equipped Completely

WESTERN THEATRICAL EQUIPMENT CO., 337 Golden Gate Ave., San Francisco 2. Telephone: Hemlock 1-8302. PERSONNEL—*President and Manager:* Harry Sarber. AREA SERVED—California, Nevada, Idaho, Arizona, Utah, Oregon, Montana.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

Distributors for:

• BRENKERT PROJECTORS • RCA SOUND SYSTEMS • INTERNATIONAL CHAIRS • BALDOR RECTIFIERS • CENTURY ROTH GENERATORS • MOHAWK CARPETS • RCA SCREENS • WESTINGHOUSE LAMPS • DRIVE-IN EQUIPMENT • BRENKERT ARC LAMPS • WESTINGHOUSE RECTIFIERS • RCA SPEAKER SYSTEMS.

Hessick, Weldon Girard. AREA SERVED—Southern California, Arizona, Southern Nevada.

B. F. SHEARER COMPANY, 1964 S. Vermont Ave., Los Angeles 7. Telephones: ROchester 1145 — (Night) Brighton 04901, Pleasant 15261. PERSONNEL — *Manager:* Barclay W. Ardell. *Salesmen:* C. L. Russell, Ed Budd, Lloyd M. Honey, Henry Grussing, L. F. Abbott, Don Griewe. *Counter Man:* Stanley H. Lay. AREA SERVED—Southern California, Arizona, New Mexico, Southern Nevada.

*RIDDELS THEATRE SUPPLY, 1543 Fifth Ave., San Diego.

NATIONAL THEATRE SUPPLY, 255 Golden Gate Ave., San Francisco 2. Telephone: MArket 1-4171. PERSONNEL — *Manager:* Heaton Randall. AREA SERVED—Northern California, Nevada, Southern Oregon.

WALTER G. PREDDEY, 187 Golden Gate Ave., San Francisco 2. Telephones: UNderhill 1-7571-2—(Emergency Night) BAyview 1-5749. PERSONNEL — *Owner:* Walter G. Preddey. *Manager:* Robert O. Bemis. *Salesmen:* Jas. Sheahan, H. C. Graywood. AREA SERVED—California, Nevada, Oregon, Arizona, Hawaii, Alaska.

B. F. SHEARER COMPANY, 243 Golden Gate Ave., San Francisco 2. Telephone: UNderhill 1-1816. PERSONNEL — *Manager:* H. I. Tegtmeier. *Salesmen:* Wesley Rosenthal, Gordon Morris, Eddie Albin. *Counter Man:* T. L. Shearer, Jr. AREA SERVED—Northern California, Nevada, Southern Oregon, Hawaii.

*C. R. SKINNER MFG. CO., 294 Turk St., San Francisco.

WESTERN THEATRICAL EQUIPMENT CO., 337 Golden Gate Ave., San Francisco 2. *(See display listing on this page.)*

COLORADO

GRAHAM BROTHERS, 546 Lincoln St., Denver 9. Telephone: TAbor 5467. PERSONNEL — *Owners:* J. M. and H. W. Graham. AREA SERVED—Colorado, New Mexico, Wyoming, Nebraska, and Black Hills of South Dakota.

NATIONAL THEATRE SUPPLY, 2111 Champa St., Denver 2. Telephones: TAbor 0201—(Emergency Night) Race 0392. PERSONNEL—*Co-Managers:* Jasper J. Morgan and Joe B. Stone. *Salesman:* J. Richard Lutz. AREA SERVED — Colorado, New Mexico, Wyoming, Western Nebraska, Eastern Montana, and Black Hills of South Dakota.

WESTERN SERVICE & SUPPLY, INC., 2120 Broadway, Denver 2. Telephones: KEystone 8041, KEystone 5729—(Emergency Night) LA 524R. PERSONNEL—*President:* H. M. McLaren. *Manager:* S. R. Langwith. *Office Manager:* Jean Gerbase. AREA SERVED—Colorado, Wyoming, Western Nebraska, Western S. Dakota, New Mexico.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

• RCA SOUND SYSTEMS • SNOWHITE SCREENS • BRENKERT PROJECTORS • BRENKERT ARC LAMPS • GENERATORS • RECTIFIERS • LENSES • STAGE DRAPERIES and TRACKS • INTERNATIONAL SEATS • FLOOR COVERINGS • LOBBY FRAMES • DECORATING • NATIONAL CARBONS • TICKETS • AIR CONDITIONING • HEATING • VENTILATING • BLOWERS and COMPLETE LINE OF SUPPLIES.

Manufacturers of
WESTERN REEL END ALARMS

LOU PHILLIPS THEATRE SUPPLIES, INC., 130 Meadow St., New Haven 10. Telephones: 7-4579—(Emergency Night) 5-4774. PERSONNEL—*President and General Manager:* Lou Phillips. *Treasurer:* George Comden. *Salesman:* William Pavone. *Secretary:* Carmel Mastro. *Mechanic:* Anthony Cassella. AREA SERVED—Connecticut.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

Leading the Equipment Parade

• BRENKERT PROJECTORS and LAMPHOUSES • RCA SOUND SYSTEMS and MAINTENANCE • INTERNATIONAL CHAIRS • MOHAWK CARPETS • CENTURY GENERATORS • WESTINGHOUSE RECTIFIERS • WESTINGHOUSE MAZDA LAMPS • STAGE LIGHTING and DRAPERIES • NATIONAL CARBONS • WAGNER SIGNS and SILHOUETTE LETTERS • A.D. CURTAIN CONTROLS and TRACKS.

***RCA DRIVE-IN THEATRE EQUIPMENT** (The overwhelming choice of the nation's Drive-In Theatres)*

HERTNER TRANSVERTERS
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS
PEERLESS MAGNARC LAMPS

See **NATIONAL** *for* **AMERICAN SEATING**

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need . . . . .

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

ELMER H. BRIENT & SONS, INC., 12 H St., N.E., Washington, D. C. Telephones: District 5905-6, Wisconsin 1453. PERSONNEL — *General Manager:* Elmer H. Brient. *Office Manager:* Ted C. Brient. *Sales Manager:* Robert H. Brient. *Salesman:* J. K. Sherrod. *Repairs and Service:* Robert Gollohon. *Air Conditioning and Consulting Engineer:* C. L. Rakow. *Office and Counter:* Jerry Barbar. AREA SERVED—District of Columbia, Maryland, Virginia, Northeastern W. Virginia, Delaware.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Drive-In Equipment •
13 Complete Drive-In Systems •

• RCA PHOTOPHONE SOUND • BRENKERT PROJECTORS • RCA SNOWHITE SCREENS • LENSES • GENERATORS • LAMPS • SPOTLIGHTS • STAGE DRAPES • TRACKS • DECORATING • LIGHTING • AIR CONDITIONING • HEATING • VENTILATING • BLOWERS • REFRIGERATION • SEATS • STAIR and LOBBY MATS • FLOOR COVERING • LOBBY FRAMES • MARQUEES • DECORATIVE FRONTS • TICKET REGISTERS • CHANGEMAKERS • MOHAWK CARPETS • RECTIFIERS • COMPLETE LINE OF SUPPLIES • POPCORN MACHINES • REPAIRS and SERVICE • CARBONS • TICKETS.

Dependable Consultation, Design, Engineering and Equipment

SERVICE THEATRE SUPPLY CO., 2054 Broadway, Denver 2. Telephones: ALpine 1597—(Emergency Night) AL. 1597, CH. 5149. PERSONNEL—*President:* Ted Knox. *Sec. and Treas.:* Elsie Knox. *Office Manager:* Wm. Haun. AREA SERVED—Denver Film Territory.

WESTERN SERVICE & SUPPLY, INC., 2120 Broadway, Denver 2. *(See display listing on page 457.)*

CONNECTICUT

NATIONAL THEATRE SUPPLY, 122 Meadow St., New Haven 10. Telephone: 7-5829. PERSONNEL—*Manager:* William J. Hutchins. *Salesman:* Frederick Dandio. AREA SERVED—Connecticut.

LOU PHILLIPS THEATRE SUPPLIES, INC., 130 Meadow St., New Haven 10. *(See display listing on page 457.)*

DISTRICT OF COLUMBIA

ELMER H. BRIENT & SONS, INC., 12 H St., N.E., Washington, D. C. *(See display listing on this page.)*

BEN LUST THEATRE SUPPLY CO., 1001 New Jersey Ave., N.W., Washington 1. Telephones: NAtional 5376-77 — (Emergency Night) DEcatur 5758. PERSONNEL—*Owner:* Ben Lust. Irwin Lust. *Mechanic:* Harold Potter. AREA SERVED—District of Columbia, Maryland, West Virginia, Virginia.

FLORIDA

SOUTHEASTERN THEATRE EQUIP. CO., 625 W. Bay St., Jacksonville 4. *(See display listing on this page.)*

JOE HORNSTEIN, INC., 714 N.E. First Ave., Miami 36. *(See display listing on this page.)*

UNITED THEATRE SUPPLY CORP., 110 N. Franklin St., Tampa 1. Telephone: M-3045. PERSONNEL—*Pres. and Treas.:* Ray Busler. *Secretary:* Edna L. Worth. *Service Engineers:* Huey Marsh, William Bell. *Counter Man:* S. W. Smith. AREA SERVED—Florida, South Georgia, Cuba and the Bahamas.

GEORGIA

DIXIE THEATRE SERVICE & SUPPLY CO., 1014 N. Slappey Drive, Albany. *(See display listing on this page.)*

* Listing not confirmed by Supply Dealer

SOUTHEASTERN THEATRE EQUIP. CO., 625 W. Bay Street, Jacksonville 4. Telephones: 4-3443 — (Emergency Night) 5-8280-W. PERSONNEL — *President and General Manager:* J. B. Dumestre, Jr. *Assistant General Manager:* Fred Bearden, Jr. *Manager:* William H. Murphy, Jr. AREA SERVED—Florida.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Sales and Service

• BRENKERT PROJECTORS and LAMPS • CENTURY ROTH MOTOR GENERATOR SETS • RCA TUBE RECTIFIERS • RCA SOUND SYSTEMS • RCA SNOWHITE SOUND SCREENS • BAUSCH and LOMB LENS • INTERNATIONAL ALL STEEL CHAIRS • MOHAWK CARPETS and ALLEN CARPET LINING • U. S. AIRCO VENTILATING and REFRIGERATION • WESTINGHOUSE MAZDA LAMPS • NATIONAL CARBONS • THEATRE LIGHTING FIXTURES.

and

Offering a complete architectural and engineering service on both new construction and remodelling.

Contact us for specially designed stage and house draperies.

JOE HORNSTEIN, INC., 714 N.E. First Ave., Miami 36. Telephone: 2-7596. PERSONNEL — *Owner:* Joe Hornstein. *Manager:* Hal Hornstein. *Counter Man:* E. Gilliam. AREA SERVED—Southern States.

DIXIE THEATRE SERVICE & SUPPLY CO., 1014 N. Slappey Drive, Albany. Telephones: 3431—(Emergency Night) 2015, 4944-J. PERSONNEL—*General Manager:* L. W. McClung. *Service Manager:* W. N. Ashbey. *Warehouse:* Lyle McClung, Jr. *Sales Manager:* James O. McClung. AREA SERVED — Georgia, Southern Alabama, Northern Florida.

AUTHORIZED DEVRY DEALER

Distributors for
DeVRY Equipment
STRONG Lamps & Rectifiers
IDEAL Chairs
BIGELOW-SANFORD Carpets
SEALUXE Poster Frames
GENERAL REGISTER Ticket Machines
NEUMADE, GOLDE, LaVEZZI Equipment
DIXIE-BELLE Popcorn & Supplies
Complete stock of Theatre Supplies
Revere 8mm Cameras & Projectors



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

AUTHORIZED DISTRIBUTOR for

SALES-SERVICE ON—
Strong Lamp Houses, Robin-Imperial Steadypower Generators, Forest and Strong Rectifiers, Ideal Seating Theatre Chairs, Raytone Mirrophonic Screens, Valion and A.D.C. Curtain Controls, National Carbons, General Register Ticket Machines, Bausch & Lomb Lenses, Wilton Carpets "by the Makers of Gulistan," Champion Lamps,
—and a full line of Building and Remodeling Supplies including: Interior Decorating, Draperies, Rubber Mats, Fans and Blowers, Air Conditioning, Heating, Theatre Fronts, Lighting Fixtures, etc.

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

See NATIONAL for BEVELITE LETTERS

SIMPLEX SOUND AND PROJECTION

Equipment and Supplies for Every Theatre Need

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

SOUTHEASTERN THEATRE EQUIP. CO., 202 Luckie Street, N.W., Atlanta 1. Telephone: CYpress 0461. PERSONNEL—*President and General Manager:* J. B. Dumestre, Jr. *Assistant General Manager:* Fred Bearden, Jr. *Manager:* J. B. Dumestre, III. AREA SERVED—Southern States.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Sales and Service

• BRENKERT PROJECTORS and LAMPS • CENTURY ROTH MOTOR GENERATOR SETS • RCA TUBE RECTIFIERS • RCA SOUND SYSTEMS • RCA SNOWHITE SOUND SCREENS • BAUSCH and LOMB LENS • INTERNATIONAL ALL STEEL CHAIRS • MOHAWK CARPETS and ALLEN CARPET LINING • U. S. AIRCO VENTILATING and REFRIGERATION • WESTINGHOUSE MAZDA LAMPS • NATIONAL CARBONS • THEATRE LIGHTING FIXTURES.

and

Offering a complete architectural and engineering service on both new construction and remodelling.

Contact us for specially designed stage and house draperies.

CAPITAL CITY SUPPLY CO., INC., 161 Walton St., N.W., Atlanta 3. Telephones: WA. 1244—(Emergency Night) CH. 6885. PERSONNEL—*President and Manager:* O. J. Howell. *Vice-President:* Walter H. King. *Secretary and Treasurer:* L. V. King. AREA SERVED—Georgia, Tennessee, Alabama, part of Florida.

NATIONAL THEATRE SUPPLY, 187 Walton St., N.W., Atlanta 3. Telephone: Lamar 8486. PERSONNEL—*Manager:* J. C. Brown. *Assistant Branch Manager:* R. M. Goldsmith *Salesmen:* J. G. Thigpen, J. O. Jetton, W. H. Hutt, Jr. AREA SERVED—Georgia, Florida, Alabama, Tennessee.

SOUTHEASTERN THEATRE EQUIP. CO., 202 Luckie St., N.W., Atlanta 1. *(See display listing on this page.)*

WIL-KIN THEATRE SUPPLY, INC., 150 Walton St., N.W., Atlanta 3. *(See display listing on this page.)*

ILLINOIS

ABBOTT THEATRE EQUIPMENT CO., 1311 S. Wabash Ave., Chicago 5. *(See display listing on this page.)*

ACADEMY THEATRE SUPPLY CO., 1235 S. Wabash Ave., Chicago 5. Telephones: Webster 7268—(Emergency Night) Wentworth 3520. PERSONNEL—S. Chernoff, J B. Rubin, I. S. Stacel. AREA SERVED—Illinois, Indiana.

*DROLL THEATRE SUPPLY COMPANY, 925 W. Jackson Blvd., Chicago.

*E. E. FULTON CO., 902 S. Wabash Ave., Chicago 5.

ROBERT S. GARDNER, 4431 W. Lake St., Chicago 24. Telephone: ESterbrook 8-6600. AREA SERVED—Northern Illinois and Indiana.

NATIONAL THEATRE SUPPLY, 1325 S. Wabash Ave., Chicago 5. Telephone: WAbash 2-8266. PERSONNEL—*Manager:* R. P. Rosser, Jr. *Salesmen:* M. L. Morrison, R. A. Jansson, O. C. Wells. *Engineer:* W. C. Grumer. AREA SERVED—Illinois, Northern Indiana, Eastern Iowa.

INDIANA

EVANSVILLE THEATRE SUPPLY, 1738 E. Delaware St., Evansville 11. *(See display listing on this page.)*

ABBOTT THEATRE EQUIPMENT CO., 1311 S. Wabash Avenue, Chicago 5. Telephones: HArrison 7-7573-74, 7-7520-21. PERSONNEL — *Owner:* Harold Abbott. *Sales Manager:* Spero L. Kontos. *General Manager:* Erwin J. Peterson. *Office Manager:* Eleanor Berger. *Installation Supervisor:* H. C. Blackwood. AREA SERVED—Illinois, Northern Indiana, Lower Michigan.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Sales and Service

• BRENKERT PROJECTORS • BRENKERT LAMPS • RCA SOUND SYSTEMS • LIGHTING and STAGE EQUIPMENT • AIR CONDITIONING and VENTILATING EQUIPMENT • RCA and DA-LITE SCREENS • MOHAWK CARPETING • INTERNATIONAL and IDEAL THEATRE CHAIRS • STRONG LAMPS and RECTIFIERS • COMPLETE THEATRE INTERIOR DECORATING • SPECIALLY DESIGNED DRAPERIES OF ALL TYPES • KOLLMORGEN SNAPLITE and SUPER SNAPLITE LENSES • GENERAL REGISTER TICKET MACHINES and TICKET BOXES • COMPLETE LOBBY FIXTURES and DISPLAYS.

Specialists in Drive-In Theatres

WIL-KIN THEATRE SUPPLY, INC., 150 Walton St., N.W., Atlanta 3. Telephone: Walnut 4613. PERSONNEL—*Sales Manager:* C. W. Fortson. *General Manager:* Nash Weil. AREA SERVED—Alabama, Florida, Georgia, Eastern Tennessee.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

ASHCRAFT Lamphouses and Rectifiers
HEYWOOD-WAKEFIELD Chairs
COINOMETER Change Machines
AUTOMATIC DEVICES Curtain Tracks and Controls
ADLER Silhouette Sign Letters
CRETORS Popcorn Machines

We maintain Projection and Sound Equipment Repair Shops and our own Drapery Shop.

"Everything for the Theatre Except Film"

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 278, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

EVANSVILLE THEATRE SUPPLY, 1738 E. Delaware St., Evansville 11. Telephones: 3-7534, 3-7092. PERSONNEL—*Owner and Manager:* David J. Stumpf. *Sales:* Wilfred A. Jarboe, Carl Amos. Claud Ogden, Harper Lyons. AREA SERVED — Indiana, Kentucky, Illinois.

AUTHORIZED DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers for Drive-Ins and "Brilliante" Lenses
USAIRCO Air Conditioning
POBLOCKI Porcelain Fronts, Marquee and Boxoffice Equipment
IDEAL Chairs
V.S.C. Sound Screen
DAZIAN'S Fabric for Theatrical use
ELECTRIC-AIRE Hand Dryers
STEADY POWER Generators
CONTOUR Curtains



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy—DeVRY

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS

See **NATIONAL** *for* **CRESTWOOD CARPET**

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

MID-WEST THEATRE SUPPLY CO., INC., 448 N. Illinois St., Indianapolis 4. Telephone: Riley 5655. (24 hour service). PERSONNEL — *Owners:* H. B. Snook, *President*, J. P. Ware, *Vice President*, T. M. Fisher, *Secretary-Treasurer. Salesman:* A. C. Craig. *Counter Man:* Carl Y. Miller. AREA SERVED—Indiana, Western Kentucky.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Sales and Service on:

• BRENKERT PROJECTORS • BRENKERT LAMPS • RCA SOUND EQUIPMENT • RCA and BALDOR RECTIFIERS • BAUSCH and LOMB LENSES • SNAPLITE and SUPER SNAPLITE LENSES • INTERNATIONAL THEATRE CHAIRS • MOHAWK and LEEDOM CARPETS • U. S. AIR VENTILATING EQUIPMENT • POBLOCKI MARQUEES and BOX OFFICES • VALLEN CURTAIN CONTROLS and TRACKS • WESTINGHOUSE MAZDA LAMPS • NATIONAL CARBONS • STAGE DRAPERIES.

And a complete line of supplies and rebuilt equipment including rebuilt theatre chairs.

Monthly Payments

FALLS CITY THEATRE EQUIPMENT CO., 427-29 S. 3rd St., Louisville 2. Telephones: JAckson 7559, CLay 3186. PERSONNEL—*Owner:* W. E. Carrell, Sr. *Manager:* J. Raymond Mattingly. *Salesmen:* W. E. Carrell, II, Charles B. Wells, Jr. *Counter Man:* Harry Woodson. *Service Engineer:* Frank H. Riffle. AREA SERVED—Kentucky, Southern Indiana, Southern Ohio, Northern Tennessee.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

Sales and Service On:

STRONG Projection Lamps
IDEAL Theatre Chairs
PROJECTION OPTICS Lens
NEUMADE Booth Accessories
THOMAS L. LEEDOM Carpet
STAGE CURTAINS and DRAPERIES
NATIONAL Carbons
Complete Line of Supplies

We maintain a complete sound and projection repair service.

Complete line of Drive-In Theatre Equipment

See Complete Data on Pages 278, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

GER-BAR, INC., 442 N. Illinois St., Indianapolis 4. Telephone: LIncoln 1727. PERSONNEL — B. Hopkins, S. Perk, M. Hopkins, F. Leas, J. Archer, V. Souviner, K. Miller.

MID-WEST THEATRE SUPPLY CO., INC., 448 N. Illinois St., Indianapolis 4. *(See display listing on this page.)*

NATIONAL THEATRE SUPPLY, 436 N. Illinois St., Indianapolis 4. Telephones: LIncoln 4517 — (Emergency Night) IMperial 0325, TAlbot 6490, TAlbot 5126. PERSONNEL—*Manager:* B. N. Peterson. *Salesmen:* W. S. Smith, J. F. Bommerscheim. *Counter Men:* R. O. Muenster, D. R. Warner. AREA SERVED—Indiana, Kentucky.

*PROJECTION EQUIPMENT CO., Union City. Telephone: 661.

IOWA

DES MOINES THEATRE SUPPLY CO., 1121 High St., Des Moines 9. Telephone: 3-6520. PERSONNEL—*Owners:* A. E. Thiele and R. G. Faulds. *Manager:* A. E. Thiele. *Salesmen:* R. G. Faulds and H. N. Sutton. AREA SERVED—Iowa.

NATIONAL THEATRE SUPPLY, 1102 High St., Des Moines 9. Telephones: 4-2322 —(Emergency Night)) 5-4162, 5-7182, 5-1326, Altoona 7561. PERSONNEL—*Manager:* A. C. Schuyler. *Salesmen:* H. W. Loeffler, M. D. Hennings, Bill Davis. AREA SERVED—Iowa, Eastern Nebraska, Southern South Dakota.

KANSAS

SOUTHWEST THEATRE EQUIPMENT CO., 118½ W. Douglas Ave., P. O. Box 2138, Wichita 1. Telephone: 2-2153. PERSONNEL —*Owner and Manager:* C. D. Peck. *Projection Maintenance:* J. O. Buckles. *Sound Engineers:* R. G. Van Sickle and B. E. Swart. AREA SERVED — Kansas, Missouri, Oklahoma, Arkansas, Texas, New Mexico.

KENTUCKY

UNIVERSAL SOUND MOVIE CO., Calhoun. Telephone: 2262. AREA SERVED—Mid-West, South.

FALLS CITY THEATRE EQUIPMENT CO., 427-29 S. 3rd St., Louisville 2. *(See display listing on this page.)*

HADDEN THEATRE SUPPLY CO., 209 S 3rd St., Louisville 2. *(See display listing on this page.)*

* Listing not confirmed by Supply Dealer

HADDEN THEATRE SUPPLY CO., 209 S. 3rd St., Louisville 2. Telephones: JAckson 0477 — (Emergency Night) HIghland 6577. PERSONNEL — *Owner:* J. Stoner Hadden. *Sales Manager:* A. V. Sheckler. *Office Manager:* E. Blaydes. AREA SERVED—Kentucky, Southern Indiana.

AUTHORIZED DeVRY DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brilliante" Lenses
BALLANTYNE R.S.M.— Complete Projectors and Sound Systems
ALTEC "Voice of the Theatre"
IRWIN Chairs
VOCALITE "Vinyl Plastic Screens"
KOLMORGEN Lenses
LIGHT MASTER Projection Lamps 45-70 Amps
ARCMASTER—1 kw Projection Lamps



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

CAPITOL THEATRE SUPPLY CO., 28 Piedmont St., Boston 16. Telephones: LIberty 2-6797 — (Emergency Night) ARlington 5-7731, PArkway 7-0808W. PERSONNEL—*President and General Manager:* K. R. (Ken) Douglass. *Treasurer:* Frank Gray. *Manager:* W. (Bill) Hawkins. *Salesmen:* Don Pickering, Don Falco, Ken Douglass, Jr., Charles Fish. *Repair Man:* Otto Holquist. *Counter Man:* Reigh Porter. AREA SERVED—Massachusetts, Connecticut, Rhode Island, Maine, Vermont, New Hampshire.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Leading the Equipment Parade

• BRENKERT PROJECTORS and LAMPHOUSES • RCA SOUND SYSTEMS and MAINTENANCE • INTERNATIONAL CHAIRS • NATIONAL CARBONS • WESTINGHOUSE MAZDA LAMPS • MARQUEES • MOHAWK CARPETS • STAGE LIGHTING and DRAPERIES • GENERAL TICKET REGISTERS • TICKETS • CENTURY-ROTH GENERATORS • WESTINGHOUSE and RCA RECTIFIERS • HOLMES PORTABLE PROJECTORS • WAGNER SIGNS and SILHOUETTE LETTERS • VALLEN CURTAIN CONTROLS and TRACKS.

RCA DRIVE-IN THEATRE EQUIPMENT (The overwhelming choice of the nation's Drive-In Theatres)

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

See NATIONAL for DRIVE-IN EQUIPMENT

SIMPLEX SOUND AND PROJECTION

Equipment and Supplies for Every Theatre Need

BEVELITE LETTERS
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

LOUISIANA

DELTA THEATRE SUPPLY, 214 S. Liberty St., New Orleans 13. Telephone: Raymond 5772. PERSONNEL — *Owner and Manager:* John F. Elzey. *Salesman:* Pat Elzey. AREA SERVED — Louisiana, Mississippi, Florida, Alabama, part of Arkansas.

*ELECTRICAL SUPPLY CO., 201 Magazine St., New Orleans 8.

HODGES THEATRE SUPPLY CO., 1309 Cleveland Ave., New Orleans 13. Telephones: CAnal 5293 — (Emergency Night) CEdar 2763. PERSONNEL — *President:* W. A. Hodges. *Salesman:* Paul German. AREA SERVED — Louisiana, Southern Mississippi, Southern Alabama, Northern Florida.

NATIONAL THEATRE SUPPLY, 220 S. Liberty St., New Orleans 13. Telephone: Raymond 4455. PERSONNEL — *Manager:* T. W. Neely. AREA SERVED—Louisiana, Alabama, Florida, Mississippi.

ALON BOYD, P. O. Box 213, Cedar Grove Sta., Shreveport. AREA SERVED—Louisiana, Southern Mississippi.

MARYLAND

J. F. DUSMAN COMPANY, 12 East 25th St., Baltimore 18. Telephones: Belmont 2747-48 — (Emergency Night) Clifton 0757. PERSONNEL—*Manager:* Henry C. Dusman. AREA SERVED—Washington Film District.

NATIONAL THEATRE SUPPLY, 417 St. Paul Place, Baltimore 2. Telephones: Mulberry 8266-67. PERSONNEL—*Manager:* N. C. Haefele. AREA SERVED — Maryland, District of Columbia, Virginia.

MASSACHUSETTS

CAPITOL THEATRE SUPPLY CO., 28 Piedmont St., Boston 16. *(See display listing on page 460.)*

JOE CIFRE, INC., 44 Winchester St., Boston 16. *(See display listing on this page.)*

INDEPENDENT THEATRE SUPPLY CO., INC., 28 Winchester St., Boston 16. Telephones: LIberty 0051 — (Emergency Night) Ken. 8995, Arl. 1693-W. PERSONNEL — *Manager:* E. K. Hosmer. *Salesman:* R. Quint. *Counter Man:* J. B. Devlin. AREA SERVED — Maine, New Hampshire, Vermont, Massachusetts, Rhode Island.

MASSACHUSETTS THEATRE EQUIPMENT CO., 20 Piedmont St., Boston 16. Telephones: LIberty 2-9814 — (Emergency Night) Granite 2-7885, Mystic 6-5597. PERSONNEL — *Owner:* P. Edward (Eddie) Comi. *Manager:* William (Bill) Cliggott. AREA SERVED—All New England states.

NATIONAL THEATRE SUPPLY, 37 Winchester St., Boston 16. Telephones: LIberty 2-2663 — (Emergency Night) ELiot 4-2957. PERSONNEL—*Manager:* H. J. McKinney. Daniel T. Angell, Robert Cone, Lawrence A. Cooney, Leon L. Foster, John E. Hawkins, John F. Savina. AREA SERVED—New England states, except Connecticut.

STANDARD THEATRE SUPPLY CO., 78 Broadway, Boston.

THEATRE SERVICE & SUPPLY CO., INC., 18 Piedmont St., Boston 16. Telephones: LIberty 2-0356—(Emergency Night) Granite 2-7885. PERSONNEL — *Owner:* P. Edward (Eddie) Comi. *Shop Foreman:* George Tradd. *Repairmen:* Joe Testa, Ted Dabrowski, Dan Dalziel. AREA SERVED—All New England states.

MICHIGAN

*AMUSEMENT SUPPLY CO., 208 W. Montcalm St., Detroit.

"ERNIE" FORBES THEATRE SUPPLY, 210-14 W. Montcalm St., Detroit. *(See display listing on this page.)*

McARTHUR THEATRE EQUIPMENT CO., 454 W. Columbia St., Detroit 1. Telephone: WOodward 1-5524. PERSONNEL — *Owner:* Geo. McArthur. *Counter Man:* James McArthur. AREA SERVED—Michigan.

NATIONAL THEATRE SUPPLY, 2312 Cass Ave., Detroit 1. Telephone: CAdillac 2447. PERSONNEL — *Manager:* C. Williamson. *Salesmen:* Lewis Burmeister, C. S. Mitchell. *Counter Man:* Jerry Boehm. AREA SERVED—Michigan.

UNITED THEATRE CAMERA & SUPPLY CO., INC., 2501 Cass at Henry, Detroit 1. Telephones: WOodward 2-6053-54. PERSONNEL—D. D. De Forge, L. E. Martin, A. F. Martin, C. E. Barge. AREA SERVED —Michigan.

*MODERN THEATRE SUPPLY CO., 320 Douglas St., Grand Rapids.

RINGOLD THEATRE EQUIPMENT CO., 106 Michigan St., N.W., Grand Rapids 2. Telephones: GL 4-8852—(Emergency Night) 3-2413. PERSONNEL—*Owner and Manager:* H. J. Ringold ARE SERVED—Michigan.

JOE CIFRE, INC., 44 Winchester St., Boston 16. Telephone: LIberty 2-0445. PERSONNEL — (Residential Telephones): *Pres. & Treas.:* Joe Cifre, PR 3-1799. *Gen. Mgr.:* Ernest J. Comi, BL 8-6855. *Storekeeper:* Emil A. Franzi, PR 8-5355. *Sales:* Hugh E. Jenkins, LA 5-6396. *Service:* Albert I. Goldman, GA 7-5861. *Shipping Dept.:* John L. Mulkeen. AREA SERVED—All New England States.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

"EVERYTHING for the Theatre, Hall and Auditorium"

CONSULTING THEATRE ENGINEERS
Designing, Planning, Engineering
Conventional and Drive-In Theatres
In Boston it's "JOE CIFRE"

NEW ENGLAND'S OLDEST, LARGEST AND BEST STOCKED THEATRE EQUIPMENT HOUSE

Quality Equipment

SOUND PROJECTORS
ARC LAMPS
and
DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 278, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

"ERNIE" FORBES THEATRE SUPPLY, 210-14 W. Montcalm St., Detroit. Telephones: WO. 1-1122-3 — (Emergency Night) VE. 7-1227. PERSONNEL—*Owner:* Ernest H. Forbes. *Salesmen:* Howie T. Forbes, Joe Burnett. AREA SERVED—Michigan.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Leading the Equipment Parade

• BRENKERT PROJECTORS and LAMPHOUSES • RCA SOUND SYSTEMS and MAINTENANCE • INTERNATIONAL CHAIRS • NATIONAL CARBONS • WESTINGHOUSE MAZDA LAMPS • MARQUEES • MOHAWK CARPETS • STAGE LIGHTING and DRAPERIES • GENERAL TICKET REGISTERS • TICKETS • CENTURY-ROTH GENERATORS • BALDOR RECTIFIERS • HOLMES PORTABLE PROJECTORS • WAGNER SIGNS and SILHOUETTE LETTERS • VALLEN CURTAIN CONTROLS and TRACKS.

RCA DRIVE-IN THEATRE EQUIPMENT (The overwhelming choice of the nation's Drive-In Theatres)

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
BEVELITE LETTERS

See NATIONAL for GOVERNAIR AIR CONDITIONING

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

MINNEAPOLIS THEATRE SUPPLY, 78 S. 12th St., Minneapolis 4. Telephones: BRidgeport 3306 — (Emergency Night) ALdrich 7586, DUpont 3936. PERSONNEL — *Co-Owners:* C. C. Creamer, R. C. Lahti, R. E. Lundquist. AREA SERVED — Minnesota, North and South Dakota, North-West Wisconsin.

AUTHORIZED DISTRIBUTOR for

ASHCRAFT LAMPS
IDEAL SEATING
DA-LITE SCREENS
VOICE OF THE THEATRE SPEAKERS
AUTOCRAT IN-CAR SPEAKERS

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

MINNESOTA

M. C. CONRADSEN, 39 Glenwood Ave., Minneapolis 3. Telephone: BRidgeport 1722. PERSONNEL—*Manager:* M. C. Conradsen. *Installation Engineer:* C. E. Werdahl. AREA SERVED—Minnesota, North and South Dakota, Western Wisconsin.

ELLIOTT FILM & THEATRE EQUIPMENT CO., 1110 Nicollet Ave., Minneapolis. Telephones: Geneva 4219 — (Emergency Night) Walnut 1900. PERSONNEL—*Owner:* Fred A. Hoffman. AREA SERVED—Minnesota, North and South Dakota, Northern Wisconsin.

FOSTER THEATRE SUPPLY CO., 39 Glenwood Ave., Minneapolis 3. Telephones: BRidgeport 1722—(Emergency Night) LOcust 1675. PERSONNEL — *Co-Owner and Manager:* E. W. Foster. AREA SERVED—Minnesota, North and South Dakota, Western Wisconsin, Northern Iowa.

FROSCH THEATRE SUPPLY, 1111 Currie Ave., Minneapolis 3. Telephone: Bridgeport 1166. PERSONNEL—*Owner:* M. E. Frosch. *Manager:* Henry Miller—Hy. 1753. AREA SERVED—Minnesota, North Dakota, South Dakota, Northern Iowa, Northern Wisconsin, Northern Michigan.

MINNEAPOLIS THEATRE SUPPLY, 78 S. 12th St., Minneapolis 4. *(See display listing on this page.)*

NATIONAL THEATRE SUPPLY, 56 Glenwood Ave., Minneapolis 3. Telephones: Main 8273 — (Emergency Night) Walnut 4127, Locust 9477. PERSONNEL—*Manager:* A. T. Crawmer. *Sales and Service:* H. P. Hansen. AREA SERVED—Minnesota, North Dakota, Western Wisconsin, Eastern South Dakota.

WESTERN THEATRE EQUIPMENT EXCHANGE, 45 Glenwood Ave., Minneapolis 3. Telephone: Geneva 2066. PERSONNEL—*Owner and Manager:* George Kopman. *Salesman:* H. Kopman. *Counter Man:* Thomas Zimmerman. AREA SERVED—Minnesota, South Dakota, North Dakota, Northern part of Wisconsin, and part of Iowa.

ST. LOUIS THEATRE SUPPLY CO., 3310 Olive St., St. Louis 3. Telephones: Jefferson 7974-75—(Emergency Night) CO. 9230. PERSONNEL—*Manager:* A. H. Hosier. *Salesman:* Don Wyrick. *Office:* Joe Newsham, Clara Murphy. *Repairs:* Mac Bostelmann. AREA SERVED—Central and Southern Illinois, Kentucky, Eastern Missouri.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

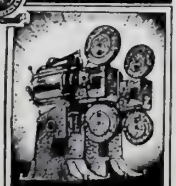
• RCA THEATRE and DRIVE-IN THEATRE SOUND SYSTEMS • BRENKERT BX-80 62-60 PROJECTORS • BRENKERT ARC LAMPS • WESTINGHOUSE and CENTURY POWER EQUIPMENT • RCA TELEVISION SYSTEMS • MOHAWK CARPETS • ALLEN RUG CUSHIONS • INTERNATIONAL CHAIRS • NEUMADE PRODUCTS • RCA SNOWHITE SCREENS • TOLEX PRODUCTS.

Complete Line of All Accessories for the Theatre and Drive-In Theatre

STEBBINS THEATRE EQUIPMENT COMPANY, 1804 Wyandotte, Kansas City 8. Telephones: GRand 0134—(Emergency Night) DRexel 2791. PERSONNEL—*Manager:* C. H. Badger. *Sales:* C. P. Pearce, M. Mabry, J. J. Gillis. AREA SERVED — Kansas, Missouri, Oklahoma, Nebraska.

AUTHORIZED DEVRY DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brillante" Lenses
16mm. Cameras and Projectors
STRONG Lamps and Rectifiers
IDEAL Theatre Chairs
NATIONAL Carbons
Projection Lenses
Screens
Spot Lights



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

McCARTHY THEATRE SUPPLY CO., 3003 Montana Ave., Billings. PERSONNEL — *Owner:* Gene McCarthy. *Sales:* Bob Hutchins. *Counter Sales:* Don DeJong. AREA SERVED—Montana, Idaho, Wyoming.

AUTHORIZED DISTRIBUTOR for

STRONG Arc Lamps and Rectifiers
NATIONAL Carbons
NEUMADE Products
SEALUXE Poster Cases
LEEDOM Carpets
ALTEC-LANSING Public Address Systems
VOICE OF THE THEATRE Speaker Systems

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS

See **NATIONAL** *for*
HERTNER TRANSVERTERS
SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need . . .

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

QUALITY THEATRE SUPPLY CO., INC., 1515 Davenport Street, Omaha 2. Telephones: At. 7253 — (Emergency Night) Glendale 3902. PERSONNEL—*Owners:* Carl and Lynn White. *Manager:* Carl White. *Secretary:* Hazel White. *Salesman:* Wilbur Granville. *Counter Man:* Carl White, Jr. AREA SERVED—Nebraska, Western Iowa, Southern South Dakota.

AUTHORIZED DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brilliante" Lenses
STRONG Projection Lamps and Rectifiers
VOCALITE Sound Screens
SNAPLITE and SUPER-LITE Projection Lenses
IRWIN Theatre Seats
STAR Popcorn Machines
NATIONAL Projector Carbons
Complete line of Supplies and Repairs



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

THE WESTERN THEATRE SUPPLY CO., 214 N. 15th St., Omaha 2. Telephones: Atlantic 9046—(Emergency Night) Kenwood 1232. PERSONNEL—*Owner:* F. A. Van Husan. *Sales:* E. N. Epley. *Engineer:* H. Coyne. *Counter Clerk:* Wm. H. Morgan. *Secretary:* Rose Robinson. AREA SERVED—Nebraska, Iowa, South Dakota, North Dakota, Missouri, Kansas.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Sales and Service on:

• RCA SOUND SYSTEMS • BRENKERT PROJECTORS • BRENKERT ARC LAMPS • SNOWHITE SCREENS • RCA TUBE RECTIFIERS • MOHAWK CARPETS • INTERNATIONAL CHAIRS • WESTINGHOUSE LAMPS • GENERAL REGISTER TICKET MACHINES • KOLLMORGEN LENSES • GOLDE GOLDBERG ELECTRIC REWINDERS • NEUMADE FILM CABINETS • ROYAL CHROME FURNITURE • NATIONAL CARBONS • AIR CONDITIONING EQUIPMENT.

Dependable Consultation on Design - Engineering - Equipment

NATIONAL THEATRE SUPPLY, 223 W. 18th St., Kansas City 8. Telephones: HArrison 3256 — (Emergency Night) JAckson 8082. PERSONNEL — *Manager:* Arthur de Stefano. *Office Manager:* C. Ray Green. *Order Desk:* Carl Whitney. *Representatives:* Ned G. Busher, James B. Killian, Jr. AREA SERVED—Kansas, Western Missouri.

SHREVE THEATRE SUPPLY CO., 217 W. 18th St. Kansas City. Telephone: HArrison 7849.

STEBBINS THEATRE EQUIPMENT CO., 1804 Wyandotte, Kansas City 8. *(See display listing on page 462.)*

JOE HORNSTEIN, INC., 3146 Olive St., St. Louis 3. Telephones: FRanklin 0999—(Emergency Night) Parkview 7349. PERSONNEL—*Owners:* Morton S. Gottlieb and Joe Hornstein. AREA SERVED — Eastern Missouri, Southern Illinois, part of Kentucky, part of Arkansas.

NATIONAL THEATRE SUPPLY, 3212 Olive St., St. Louis 3. Telephones: NEwstead 6350, 6351—(Emergency Night) EVergreen 4533. PERSONNEL—*Manager:* W. C. Earle. *Salesmen:* W. A. Guinan, W. C. Earle, Jr., H. H. Hoff. *Counter Man:* J. W. Rust. *Service Man:* J. J. Schrempp. AREA SERVED—Illinois, south of Springfield; Missouri, east of Jefferson City; Southwestern Kentucky.

ST. LOUIS THEATRE SUPPLY CO., 3310 Olive St., St. Louis 3. *(See display listing on page 462.)*

MONTANA

McCARTHY THEATRE SUPPLY CO., 3003 Montana Ave., Billings. *(See display listing on page 462.)*

NEBRASKA

QUALITY THEATRE SUPPLY CO., INC., 1515 Davenport St., Omaha 2. *(See display listing on this page.)*

THE WESTERN THEATRE SUPPLY CO., 214 N. 15th St., Omaha 2. *(See display listing on this page.)*

NEW MEXICO

EASTERN NEW MEXICO THEATRE SUPPLY CO., Box 1099, Clovis. Telephones: Clovis 1430 — (Emergency Night) Clovis 790. PERSONNEL—*Manager:* E. R. Hardwick. AREA SERVED — Eastern New Mexico, West Panhandle of Texas.

ALBANY THEATRE SUPPLY CO., 1046 Broadway, Albany 4. Telephones: 5-5055 — (Emergency Night) 2-5359. PERSONNEL — *Owners:* John Bylancik, Jack McGrath. *Salesmen:* T. McGrath, E. Bylancik, J. Decker. *Manager:* Jack McGrath. *Counter:* J. Lewis. AREA SERVED—New York State, Vermont, Massachusetts.

AUTHORIZED DISTRIBUTOR for

DEALERS FOR:
ALTEC Speaker Systems
STRONG Lamps and Rectifiers
KOLLMORGEN Lenses
WAGNER Letters
NEUMADE Products
GOLDE Spotlights
SEALUXE Frames
REBUILT Theatre Chairs

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

BECKER THEATRE SUPPLY CO., 492 Pearl St., Buffalo 2. Telephones: CLeveland 7276 — (Emergency Night) VIctoria 3720. PERSONNEL — Albert Becker, Peter Becker. AREA SERVED—Western New York State.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

DRAPERIES
CURTAINS
STAGE LIGHTING
SEATS
And all other necessary equipment for the modern theatre
Plus Complete Drive-In Theatre Equipment

See Complete Data on Pages 273, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

HERTNER TRANSVERTERS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS

See NATIONAL for PEERLESS MAGNARC LAMPS

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need . . . . .

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

BICKFORD BROTHERS CO., Theatre Equipment Division, 1209 Broadway, Buffalo 12. Telephones: Fillmore 1209—(Emergency Night) Taylor 3473, East Aurora 1213. PERSONNEL—*President:* Paul Wolk. *Vice President:* Louis S. Wolk. *Manager:* M. E. "Pick" Pickrell. *Salesman:* Mike J. Downey. AREA SERVED—New York State—except N. Y. City district.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

SERVICE Before, During and After SALES

Dependable Consultation on Design - Engineering - Equipment

RCA — Service

• DRIVE-IN EQUIPMENT • SOUND EQUIPMENT • BRENKERT PROJECTORS • BRENKERT LAMPS • RECTIFIERS • SNOWHITE SCREENS • MOHAWK CARPET • ALLEN LINING • INTERNATIONAL CHAIRS • GENERATORS • LENSES • LAMPS • SPOTLIGHTS • STAGE DRAPES • CONTROLS • MATS • LOBBY FRAMES • MARQUEES • FRONTS • TICKET REGISTERS • TICKETS • CHANGEMAKERS • CARBONS • BLOWERS • ETC.

Complete Line of Supplies

AMUSEMENT SUPPLY CO., INC., 341 W. 44th St., New York 18. Telephones: CIrcle 6-0850 — (Emergency Night) IN. 2-6991. PERSONNEL—*Manager:* Joseph J. Pear. *Salesmen:* Harry E. Pear, Sidney Sherman, Henry Dieter. AREA SERVED—New York State, New Jersey, Connecticut.

AUTHORIZED DISTRIBUTOR for

DISTRIBUTORS FOR:
AUTOCRAT In-Car Speakers, STRONG Lamphouses and Rectifiers, STABILARC Generators, SNAPLITE Coated Lenses, RAYTONE Screens, LEEDOM Carpets, STANLEY Frames and Boxoffices, ADLER and WAGNER Aluminum and Plastic Marquee Letters, A.D.C. Curtain Controls and Tracks, AUTOMATICKET Ticket Registers, WESTINGHOUSE Lamps, NATIONAL Carbons, Chairs, Lighting Fixtures, Draperies and Stage Equipment, Rubber Mats and other Accessories.

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

BICKFORD BROTHERS CO., Theatre Equipment Division, 1209 Broadway, Buffalo 12. *(See display listing on this page.)*

NATIONAL THEATRE SUPPLY, 500 Pearl St., Buffalo 2. Telephones: Washington 1736-7 — (Emergency Night) University 4684, Parkside 7902, Garfield 8093. PERSONNEL—*Manager:* V. G. Sandford. *Salesman:* G. R. George. *Cashier:* Bertha Kreinik. AREA SERVED—Western New York State.

UNITED PROJECTOR & FILM CORP., 228 Franklin St., Buffalo 2. Telephones: Washington 8022-8023. AREA SERVED—Western New York State.

AMUSEMENT SUPPLY CO., INC., 341 W. 44th St., New York 18. *(See display listing on this page.)*

CAPITOL MOTION PICTURE SUPPLY CORP., 630 Ninth Ave., New York 18. Telephone: PLaza 7-4510. PERSONNEL—*President:* Ben Perse. *Vice-President:* Harry Perse. *Service Man:* Vincent Paolillo. *Salesmen:* Lou Brown, Jack Schaeffer. *Counter Man:* Sam Ochs. AREA SERVED—Southern New York State, Pennsylvania, New Jersey, Ohio.

CROWN MOTION PICTURE SUPPLIES CORP., 346 W. 44th St., New York 18.

NEW YORK

ALBANY THEATRE SUPPLY CO., 1046 Broadway, Albany 4. *(See display on page 463.)*

EMPIRE THEATRE SUPPLY CO., 1003 Broadway, Albany 4. Telephones: 5-9507—(Emergency Night) Troy 8928-J. PERSONNEL—*Owner and Manager:* E. L. Crowningshield. AREA SERVED—East through Berkshire County, Mass., north to border, south to Poughkeepsie, west to Utica.

NATIONAL THEATRE SUPPLY, 962 Broadway, Albany 4. Telephones: 5-1479—(Emergency Night) 8-5071. PERSONNEL—*Manager:* W. J. Hutchins. *Assistant Manager:* Walter Thatcher. *Salesman:* R. Mauro. AREA SERVED—Central New York.

AUBURN THEATRE EQUIPMENT CO., 5 Court St., P. O. Box 112, Auburn. Telephones: 695 — (Emergency Night) 1439. PERSONNEL—*Owner:* F. W. Spreter. *Manager:* M. E. Dawson. *Salesman:* C. Conners. *Counter Man:* E. Dean. AREA SERVED—New York State.

BECKER THEATRE SUPPLY CO., 492 Pearl St., Buffalo 2. *(See display listing on page 463.)*

JOE HORNSTEIN, INC., 630 Ninth Ave., New York 19. Telephones: CIrcle 6-6285—(Emergency Night) ESplanade 6-5698, GEdney 4-0850, GEdney 6-4611, HEmpstead 7-9034, ILlinois 9-3065. PERSONNEL — *Owner:* Joe Hornstein. *Sales Manager:* George Hornstein. *Salesmen:* Milton Hornstein, Bob Lissner, George Hornstein, Julian Norwick. *Counter Man:* Claude Scott. *Service Man:* H. Schwartz. AREA SERVED—Eastern States.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

COMPLETE DRIVE-IN EQUIPMENT
ASHCRAFT Lamphouses
ROBIN-IMPERIAL Generators
FOREST and MOTIOGRAPH-STRONG Rectifiers
MOTIOGRAPH-STRONG Lamphouses
IDEAL Theatre Chairs
RAYTONE Mirrophonic Screens
YALLEN and A.D.C. Curtain Controls
NATIONAL Carbons
GENERAL REGISTER Ticket Machines and Stub Rod Control Boxes
BAUSCH and LOMB and KOLLMORGEN Lenses
WILTON Carpets "By The Makers of Gulistan"
CHAMPION Lamps

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 278, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

S.O.S. CINEMA SUPPLY CORP., 602 W. 52nd St., New York 19. Telephones: PLaza 7-0440 — (Emergency Night) SE. 3-6875. PERSONNEL—*Manager:* J. A. Tanney, *Vice-President & Sales Manager:* Oscar Lightstone. *Showroom Sales:* Dominic Capano. *Counter Man:* Joseph Miranda. AREA SERVED—Mail Order, entire U.S.A. and FOREIGN.

S.O.S. "THE DEPARTMENT STORE FOR THE MOTION PICTURE INDUSTRY"

AMPLIFIERS
ARC LAMPHOUSES
BLOWERS & FANS
CARBONS
REFLECTORS
COATED LENSES
EFFECT MACHINES
FILM CABINETS
GENERATOR SETS
POWER PLANTS
LIGHTING EQUIPMENT

NEW & REBUILT
One Year Guarantee

"HEADQUARTERS FOR DRIVE-IN THEATRES"
Write to "DEPT. DY" of S.O.S. for Catalog
ALSO—full line of studio, recording, laboratory equipment.

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

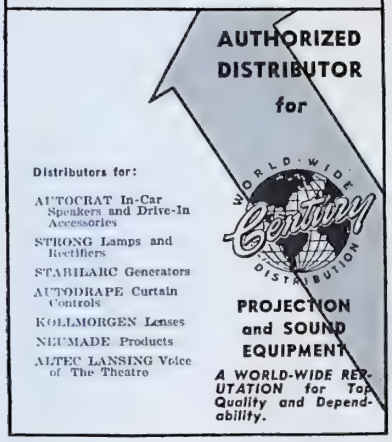
See NATIONAL for POPCORN MACHINES
SIMPLEX SOUND AND PROJECTION
Equipment and Supplies for Every Theatre Need

BEVELITE LETTERS
DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES

NATIONAL THEATRE SUPPLY



CENTRAL N. Y. THEATRE SUPPLY CO., 215 Crawford Ave., Syracuse 3. Store: 210 N. Salina St., Syracuse 2. Telephones: 25761 — (Emergency Night) 72-6372. PERSONNEL — Herbert M. Canter, Reuben C. Canter. AREA SERVED—Central & Northern New York from Albany to Buffalo.



SOUTHEASTERN THEATRE EQUIP. CO., 209 S. Poplar St., Charlotte 2. Telephones: 4-3093-94 — (Emergency Night) 4-1804, 3-1801. PERSONNEL—*President and General Manager:* J. B. Dumestre, Jr. *Assistant General Manager:* Fred Bearden, Jr. *Manager:* W. P. (Bill) White. AREA SERVED—North and South Carolina.



PERSONNEL — *Owner:* Julius H. Katz, *President, Salesman:* Wallace J. Katz. AREA SERVED—New York, Northern New Jersey, Connecticut.

JOE HORNSTEIN, INC., 630 Ninth Ave., New York 19. *(See display listing on page 464.)*

NATIONAL THEATRE SUPPLY, 356 W. 44th St., New York 18. Telephone: CIrcle 5-6900. PERSONNEL — *Manager:* Allen G. Smith. *Sales Manager:* Bernard J. Klied. *New Jersey Representative:* Stanley Lechner. *Special Sales Engineer:* William G. Nafash. AREA SERVED—Greater New York City, Southern New York, Northern New Jersey.

S. O. S. CINEMA SUPPLY CORP., 602 W. 52nd St., New York 19. *(See display listing on page 464.)*

CENTRAL N. Y. THEATRE SUPPLY CO., 215 Crawford Ave., Syracuse 3. *(See display listing on this page.)*

NORTH CAROLINA

BRYANT THEATRE SUPPLY CO., 227 S. Church St., Charlotte 1. Telephones: 2-4242, 4-5620 — (Emergency Night) 3-9635, 3-2573. PERSONNEL—*Manager:* Frank M. Strange. AREA SERVED—North and South Carolina.

DIXIE THEATRE SUPPLY CO., 324 S. Church St., Charlotte 1. Telephones: 2-4343 —(Emergency Night) 2-3039. PERSONNEL —*Owner:* J. B. Erskine. AREA SERVED—North and South Carolina.

NATIONAL THEATRE SUPPLY, 304 S. Church St., Charlotte 1. Telephones: 7753, 7754 — (Emergency Night) 5-3062, 2-1971, 7050. PERSONNEL—*Manager:* W. G. Boling. *Salesmen:* R. D. Turnbull, A. R. Coskrey. *Counter Clerk:* W. M. Collins. *Cashier:* Mrs. Edna Mills. *Billing Clerk:* Peggy Gordon. AREA SERVED—North and South Carolina.

SOUTHEASTERN THEATRE EQUIP. CO., 209 S. Poplar St., Charlotte 2. *(See display listing on this page.)*

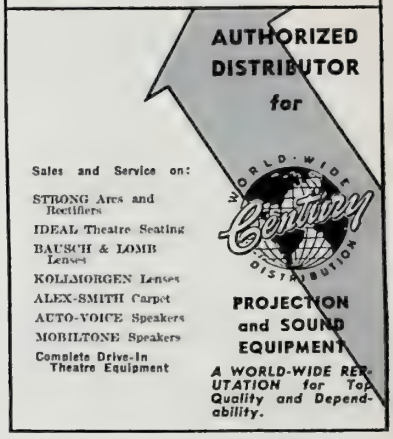
STANDARD THEATRE SUPPLY CO., 222 S. Church St., Charlotte 2. *(See display listing on this page.)*

THEATRICAL ENGINEERING CO., 2941 Chelsea Drive, Charlotte.

THEATRE EQUIPMENT CO., 220 South Poplar St., Charlotte. Telephones: 22722, 49427.

WIL-KIN THEATRE SUPPLY, INC., 229 S. Church St., Charlotte 2. *(See display listing on this page.)*

STANDARD THEATRE SUPPLY CO., 222 S. Church St., Charlotte. Telephones: 3-4525, 4-4780. PERSONNEL—*Owner:* Phil Wicker. *Manager:* Charles Duncan. *Salesmen:* Donald Swett, James Austin. AREA SERVED —North and South Carolina, Southern Virginia.



WIL-KIN THEATRE SUPPLY, INC., 229 South Church St., Charlotte 2. Telephones: 8620—(Emergency Night) 45915. PERSONNEL — *Branch Manager:* W. F. Harris, Sr. *Sales Manager:* C. W. Fortson. *General Manager:* Nash Weil. *Salesmen:* Panny Cobb (Eastern N. C.), W. F. Harris, Jr. (South Carolina). AREA SERVED—North Carolina, South Carolina.





Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

McCARTHY THEATRE SUPPLY CO., 667 N. 4th St., Box 32, Fargo. Telephones: 7801 — (Emergency Night) 23037, 25111, 33041. PERSONNEL—*Owner:* Gene McCarthy. *Auditor:* E. T. McCarthy. *Sales and Service:* Bob Wigner. AREA SERVED—Northern Minnesota, North and South Dakota.

AUTHORIZED DISTRIBUTOR for

STRONG Arc Lamps and Rectifiers
NEUMADE Products
SEALUXE Poster Cases
NATIONAL Carbons
HEYWOOD-WAKEFIELD Seating
LEEDOM Carpets
ALTEC-LANSING Public Address Systems
VOICE OF THE THEATRE Speaker Systems
BANGO South American Popcorn

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

MID-WEST THEATRE SUPPLY CO., INC., 1638 Central Parkway, Cincinnati 10. Telephones: CH 7724-25 (24 hour service). PERSONNEL—*Owners:* H. B. Snook, *President,* J. P. Ware, *Vice President,* T. M. Fisher, *Secretary-Treasurer. Salesmen:* R. W. Amos, A. J. Platt. *Counter Man:* E. C. Novak. AREA SERVED—Southern Ohio, Kentucky, Southern West Virginia.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Sales and Service on:

• BRENKERT PROJECTORS • BRENKERT LAMPS • RCA SOUND EQUIPMENT • RCA and BALDOR RECTIFIERS • BAUSCH and LOMB LENSES • SNAPLITE and SUPER SNAPLITE LENSES • INTERNATIONAL THEATRE CHAIRS • MOHAWK and LEEDOM CARPETS • U. S. AIR VENTILATING EQUIPMENT • POBLOCKI MARQUEES and BOX OFFICES • VALLEN CURTAIN CONTROLS and TRACK • WESTINGHOUSE MAZDA LAMPS • NATIONAL CARBONS • STAGE DRAPERIES.

And a complete line of supplies and rebuilt equipment including rebuilt theatre chairs.

Monthly Payments

STANDARD THEATRE SUPPLY CO., 215 E. Washington St., Greensboro. Telephones: 6165, 6166—(Emergency Night) 7281, 8022. PERSONNEL—*Owner:* Phil Wicker. *Manager:* Lawson Rankin. *Salesmen:* J. W. Markham, Lloyd Parson. *Counter Men:* George Underwood, James Harper. AREA SERVED — North and South Carolina, Southern Virginia.

*THEATRE EQUIPMENT CO., 111 Edwards Place, Greensboro. PERSONNEL—*President:* R. O. Holland.

*THEATRE SUPPLIERS, INC., 304-306 S. Davie St., Greensboro.

NORTH DAKOTA

McCARTHY THEATRE SUPPLY CO., 667 N. 4th St., Box 32, Fargo. *(See display listing on this page.)*

OHIO

AKRON THEATRE SUPPLY CO., 936 E. Market St., Akron 5. Telephone: FRanklin 2480. PERSONNEL — *Owner:* Harry P. Jones. *Counter Men:* Robert E. Jones, John Comeriato. AREA SERVED—Northeastern Ohio.

*STANDARD THEATRE SUPPLY CO., 3461 Franklin St., Bellaire.

MID-WEST THEATRE SUPPLY CO., INC., 1638 Central Parkway, Cincinnati 10. *(See display listing on this page.)*

NATIONAL THEATRE SUPPLY, 1637 Central Parkway, Cincinnati 14. Telephones: Main 6580-81. PERSONNEL—*Manager:* J. H. Kelley. John Knoop, Jr., James A. Conn, W. A. Davis, Clifford M. Larkin, Helen Gehl, Ruth Wagner. AREA SERVED — Southern Ohio, Southern West Virginia, Eastern Kentucky.

CLEVELAND PROJECTOR CO., Film Building, 23rd and Payne Ave., Cleveland.

NATIONAL THEATRE SUPPLY, 2128 Payne Ave., Cleveland 14. Telephones: PRospect 4613—(Emergency Night) Long-Acre 7608. PERSONNEL—*Manager:* F. J. Masek. *Salesmen:* Earl King, Robert Casper. *Counter Man:* Glenn Jerome. AREA SERVED—Northern Ohio.

*OHIO THEATRE EQUIPMENT CO., 2108 Payne Ave., Cleveland 14.

OLIVER THEATRE SUPPLY CO., INC., E. 23rd & Payne Ave., Cleveland 14. *(See display listing on this page.)*

* Listing not confirmed by Supply Dealer

OLIVER THEATRE SUPPLY CO., INC., E. 23rd & Payne Ave., Cleveland 14. Telephones: TOwer 1-6934-35—(Emergency Night) ACademy 5362. PERSONNEL—*Manager:* M. H. Fritchle. *Store Manager:* Irving A. Field. *Office Manager:* Mrs. Helen Albertson. AREA SERVED—Northern Half of Ohio.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

• MARQUEES • WAGNER PLASTIC LETTERS • DISPLAY CASES • RUBBER MATS OF ALL KINDS • DOOR HARDWARE • TICKET MACHINES • COIN CHANGERS • SPECIAL PRINTED TICKETS and BOX OFFICE SUPPLIES • POP CORN MACHINES • CANDY CASES and VENDING MACHINES • FOYER and LOUNGE FURNITURE and FIXTURES • CROWD CONTROL EQUIPMENT • LIGHTING FIXTURES and DIRECTIONAL SIGNS • AIR CONDITIONING • HOUSE and STAGE DRAPES • JANITORIAL EQUIPMENT and SUPPLIES • COMPLETE STOCK PROJECTION ROOM ACCESSORIES and SUPPLIES.

Complete Repair Service and Emergency Service Around the Clock

THE DAYTON FILM, INC., 2227 Hepburn Ave., Dayton 6. Telephone: RAndolph 2191. PERSONNEL—*President:* Robert F. Poorman. *Vice-President:* Arthur W. Kemp.

AUTHORIZED DISTRIBUTOR for

Distributors for:

AUTOCRAT In-Car Speakers
ALTEC Amplifiers and Speakers
NATIONAL Carbons
STRONG Lamps and Rectifiers
NEUMADE Booth Accessories
GOLDE Spots and Products
GOLDBERG Reels and Supplies

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS

See NATIONAL for WALKER SCREENS

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need . . . . .

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

SHELDON THEATRE SUPPLY, 1415 Amberly Drive, Dayton 7. Telephones: ADams 9644—(Emergency Night) Taylor 7511. PERSONNEL—*Owner:* Stu Sheldon. *Sales Manager:* Paul Swinger. *Service Manager:* Alfred Hill. AREA SERVED — Ohio, Indiana, Pennsylvania, New York, Michigan.

AUTHORIZED DEALER

Distributors for

DeVRY 35mm and 16mm Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brilliante" Lenses
STRONG Lamps and Rectifiers
STABILARC Generators
NEUMADE Products—
GOLDE Acc.
TIFFIN Drapes
NATIONAL Carbons
GENERAL REGISTERS—
ALTEC Voice of the Theatre



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy—DeVRY

*AMERICAN THEATRE SUPPLY, 165 N. High St., Columbus.

MID-WEST THEATRE SUPPLY CO., INC., 862 W. Third Ave., Columbus 12. Telephone: UN. 4177. PERSONNEL—*Owners:* H. B. Snook, President; J. P. Ware, Vice-President; T. M. Fisher, Secretary-Treasurer. *Manager:* Harold Stegmiller.

THE DAYTON FILM, INC., 2227 Hepburn Ave., Dayton 6. *(See display listing on page 466.)*

DAYTON THEATRE SUPPLY CO., 111 Volkenand St., Dayton 10. Telephone: Kenmore 5821. PERSONNEL—*Owner and Manager:* Charlie D. Wall. AREA SERVED—Southwest Ohio, Eastern Kentucky.

SHELDON THEATRE SUPPLY, 1415 Amberly Drive, Dayton 7. *(See display listing on this page.)*

AMERICAN THEATRE SUPPLY CO., 439 Dorr St., Toledo 2. Telephones: MAin 1830—(Emergency Night) LAwndale 5666. PERSONNEL—*Owner and Manager:* Paul S. Huter.

THEATRE EQUIPMENT CO., 109 Michigan St., Toledo 2. Telephones: ADams 8107-8. PERSONNEL — *Owner:* Al Boudouris. *Sales Representatives:* Jack Hagerman, John Lovell, Walter Frick. AREA SERVED—Ohio, Indiana, Michigan.

WESTERN THEATRE EQUIPMENT CO., INC., 1923 N.W. Kearney St., Portland 9. Telephones: BEacon 2195-96—(Emergency Night) EAst 3785. PERSONNEL—*President:* F. J. Becker. *General Manager:* G. Strejc. *Chief Technician:* J. T. Pollanz. *Bookkeeper:* M. Nelson. *Salesmen:* E. H. Goodlow, Ray Youngberg. AREA SERVED—Oregon and Idaho.

AUTHORIZED DISTRIBUTOR for

CONSULTING—
PLANNING—
BUILDING SUPERVISION—of Conventional and Drive-In Theatres

Consolidation of Effort Expediting of Materials

Distributors of Quality Theatre Equipment and Supplies

WORLD-WIDE Century DISTRIBUTION

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

OKLAHOMA THEATRE SUPPLY CO., 623 W. Grand Ave., Oklahoma City 2. Telephones: 7-8691—(Emergency Night) 5-9726. PERSONNEL—*Owners:* J. Eldon Peek and Maxine Peek. *Counter Man:* M. F. Bailey. AREA SERVED — Oklahoma, Panhandle District of Texas, Western Arkansas.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete RCA Theatre Equipment

ALL THEATRE SUPPLIES • POPCORN • SEASONING • ETC.

Complete Projector Repair Service

Your RCA Dealer in the Missouri, Kansas Area is—

MISSOURI THEATRE SUPPLY CO.
Kansas City, Missouri
L. J. KIMBRIEL

OKLAHOMA

W. R. HOWELL, 12 S. Walker St., Oklahoma City 4. Telephones: 3-1961—(Emergency Night) 3-5274.

MISSOURI THEATRE SUPPLY, 708 W. Grand Ave., Oklahoma City.

NATIONAL THEATRE SUPPLY, 700 W. Grand Ave., Oklahoma City 2. Telephones: 2-0203—(Emergency Night) 58-2476. PERSONNEL—*Manager:* J. I. Watkins. *Salesman:* Bill Allison. AREA SERVED—Oklahoma and Panhandle of Texas.

OKLAHOMA THEATRE SUPPLY CO., 623 W. Grand Ave., Oklahoma City 2. *(See display listing on this page.)*

OREGON

PORTLAND MOVING PICTURE MACHINE CO., 916 N. W. 19th Ave., Portland 9. Telephone: BEacon 8710. PERSONNEL—*Owner:* Pete Sabo. AREA SERVED—Oregon, Southern Washington.

VINCENT M. TATE THEATRE EQUIPMENT, 1618-20 Wyoming Ave., Forty-Fort, Wilkes-Barre. Telephone: Wilkes-Barre 7-2096 (24 hour service). PERSONNEL—*Owner:* Vincent M. Tate. *Shop and Store:* Norman Saunders. *Salesman:* Nick Markanich. AREA SERVED—Phila. Film Territory.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

IDEAL CHAIRS
Strong Lamps and Products
Emergency Lighting Systems
N. A. N. Safety Dousers

DRIVE-IN SPECIALIST COMPLETE ENGINEERING and EQUIPMENT

EVERYTHING FOR THE THEATRE

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 270, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

See NATIONAL for ALUMINEX POSTER CASES

SIMPLEX SOUND AND PROJECTION

BEVELITE LETTERS
DRIVE-IN EQUIPMENT
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need . . . . . .

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

BLUMBERG BROS., INC., 1305-07 Vine St., Philadelphia 7. Telephones: LOmbard 3-7240-41 — (Emergency Night) TRinity 7-2985-86. PERSONNEL—*President:* Harry Blumberg. *Secretary and Treasurer:* Ben Blumberg. *Salesmen:* Al Rothberg (Nite Phone—CU 8-4385), Joe Haggerty (Nite Phone — GReenwood 3-9207), Bob Day (Nite Phone—EVergreen 2-2899). AREA SERVED — Pennsylvania, Delaware, New Jersey.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

Distributors for:

• BRENKERT PROJECTORS • RCA SOUND SYSTEMS • INTERNATIONAL CHAIRS • RCA TUBE RECTIFIERS • CENTURY-ROTH GENERATORS • MOHAWK CARPETS • RCA SCREENS • WESTINGHOUSE LAMPS • DRIVE-IN EQUIPMENT • BRENKERT ARC LAMPS • WESTINGHOUSE COPPER OXIDE RECTIFIERS • RCA SPEAKER SYSTEMS.

ALEXANDER THEATRE SUPPLY CO., INC., 1705 Blvd. of the Allies, Pittsburgh 19. Telephones: Express 0777-0778 — (Emergency Night) CA. 3611. PERSONNEL—*President:* S. A. "Sam" Fineberg. *Secretary and Treasurer:* James H. Alexander. *Sales:* Wm. Weaver. *Secretary:* Charlotte Colledge. AREA SERVED—Western Pennsylvania and Northern West Virginia.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

Complete Sales and Service on:

• RCA SOUND SYSTEMS • BRENKERT PROJECTORS • BRENKERT ARC LAMPS • SNOWHITE SCREENS • RCA TUBE RECTIFIERS • MOHAWK CARPETS • INTERNATIONAL CHAIRS • WESTINGHOUSE LAMPS • GENERAL REGISTER TICKET MACHINES • PREMIER SOUTHERN TICKETS • JOHNSON'S LIGHTNING CASHIERS BAUSCH and LOMB and KOLLMORGEN LENSES • GOLDE also GOLDBERG ELECTRIC REWINDERS • NEUMADE FILM CABINETS • ROYAL CHROME FURNITURE • NATIONAL CARBONS • ETC. - ETC. - ETC.

Dependable Consultation on Design - Engineering - Equipment

B. F. SHEARER CO., 1947 N. W. Kearney St., Portland 9. Telephones: ATwater 7543—(Emergency Night) Aloha 6401, GArfield 7603, CApitol 4952. PERSONNEL—*Branch Manager:* E. C. Holland. *Engineer:* H. L. Thomas. *Salesman:* Phil W. Blake. AREA SERVED—Oregon, Southern Idaho.

THEATRE UTILITIES SERVICE CO., 1987 N. W. Kearney St., Portland 9. Telephones: BEacon 4488—(Emergency Night) BEacon 1320. PERSONNEL—*Partnership:* H. S. McLeod, C. F. Stewart. AREA SERVED—Oregon and Washington.

WESTERN THEATRE EQUIPMENT CO., INC., 1923 N.W. Kearney St., Portland 9. *(See display listing on page 467.)*

PENNSYLVANIA

CLARK THEATRE SUPPLY, Main St., Big Run. Telephone: Listed. PERSONNEL — *Owner:* G. B. C. Clark, Motion Picture Engineer. *Manager and Secretary:* F. L. Clark. *Sales and Service Engineer:* G. B. C. Clark. AREA SERVED — Western Pennsylvania, Eastern Ohio, West Virginia.

VINCENT M. TATE THEATRE EQUIPMENT, 1618-20 Wyoming Ave., Forty-Fort, Wilkes-Barre. *(See display listing on page 467.)*

*MALCOLM LAWRENCE, 520 Harrison Ave., Greensburg.

ALVIN SEILER, 205 W. Main St., Ligonier. Telephone: Ligonier 4151. PERSONNEL—*Owner:* Alvin Seiler. AREA SERVED — Western Pennsylvania, Eastern Ohio, West Virginia.

BLUMBERG BROS., INC., 1305-07 Vine St., Philadelphia 7. *(See display listing on this page.)*

NATIONAL THEATRE SUPPLY, 1225 Vine St., Philadelphia 7. Telephones: SPruce 4-6156-7-8—(Emergency Night) GR 3-7678. PERSONNEL — *Manager:* Ralph Pries. *Salesmen:* Mickey Lewis, Bob Warner, Bud Miller. *Counter Men:* George Lewis, Herbert Eveloff, Joe Segal. AREA SERVED—Eastern Pennsylvania, Delaware, Southern New Jersey.

*PENN THEATRE EQUIPMENT COMPANY, 307 N. 13th St., Philadelphia 7.

ALEXANDER THEATRE SUPPLY CO., INC., 1705 Blvd. of the Allies, Pittsburgh 19. *(See display listing on this page.)*

ATLAS THEATRE SUPPLY CO., 425 VanBraam St., Pittsburgh 19. *(See display listing on this page.)*

ATLAS THEATRE SUPPLY CO., 425 VanBraam St., Pittsburgh 19. Telephones, Grant 4281 — (Emergency Night) PE. 6330. PERSONNEL—*President and Manager:* Gordon O. Gibson. *Salesmen:* James Vazzana, James M. Gibson. AREA SERVED—Pittsburgh Film Territory.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

Strong Arc Lamps, Rectifiers, Reflectors— Kollmorgen Lenses—Bausch & Lomb Lenses—Irwin Seating, Including New Comet—Da-Lite and Vocalite Screens—Neumade Booth Supplies—Adler Silhouette Letters and Signs—Champion Display Frames—General Register Ticket Machines—Curtain Tracks and Controls—Stage Lighting and Rigging—Leedom Carpeting—U. S. Air Conditioning Units, Refrigeration Washed Air "Specialists in Drive-Ins and Theatre Remodelling"

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 278, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

MONARCH THEATRE SUPPLY, INC., 492 S. Second St., Memphis 2. Telephone: 37-4584—(Night and Sunday 9-2416. PERSONNEL — *President:* N. B. Blount. *Office Manager:* L. A. Mitchell, Sr. *Salesman:* Neil Murphy. AREA SERVED—Tennessee, Arkansas, Mississippi.

RCA THEATRE SUPPLY DEALER **EVERYTHING for the Theatre!** SEE DETAILED LISTING ABOVE

Sales and Service on:

• BRENKERT PROJECTORS • RCA SOUND SYSTEMS • BRENKERT ARC LAMPS • RCA SCREENS • WESTINGHOUSE LAMPS • BALDOR RECTIFIERS • INTERNATIONAL CHAIRS • MOHAWK CARPETS • CENTURY-ROTH GENERATORS • DRIVE-IN EQUIPMENT • WESTINGHOUSE RECTIFIERS • RCA SPEAKER SYSTEMS.

HERTNER TRANSVERTERS
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS
PEERLESS MAGNARC LAMPS

See **NATIONAL** *for* **AMERICAN SEATING**

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

TRI-STATE THEATRE SUPPLY, 318 S. Second St., Memphis 3. Telephones: 5-8240—(Emergency Night) 4-1687, 48-7326. PERSONNEL—*Owner:* George L. Williams. *Assistant Manager and Service Engineer:* R. F. Blank. *Salesmen:* John J. Federicci, Paul Cutting. AREA SERVED—Arkansas, Northern Mississippi, Western Tennessee; parts of Alabama, Kentucky and Missouri.

AUTHORIZED DISTRIBUTOR for

WORLD-WIDE Century DISTRIBUTION

Complete line of Equipment for:
Conventional and Drive-In Theatre
Complete Theatre Decorating—Drapes
Exclusive Distributors for the LORRAINE Carbons in the above territory.

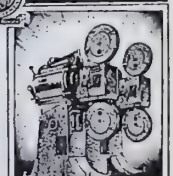
PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

ASSOCIATED INDUSTRIES CO., INC., 306 S. Pearl St., Dallas 1. Telephones: Prospect 7-2769—(Emergency Night) Taylor 1374. PERSONNEL—Charles Williams, B. B. Ponder, Wm. W. Cochrane. AREA SERVED—Texas.

AUTHORIZED DeVRY DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brillante" Lenses
DeVRY 16mm. Equipment
RADIANT Lamps
Complete line of Booth, Stage and Theatre Equipment
Complete line of Intercommunication and Sound Equipment
Repair department complete for all



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy—DeVRY

NATIONAL THEATRE SUPPLY, 1721 Blvd. of the Allies, Pittsburgh 19. Telephone: Grant 4630. PERSONNEL — *Manager:* N. F. Williams. *Office Manager:* H. W. Russell. AREA SERVED—Western Pennsylvania, West Virginia.

SUPERIOR MOTION PICTURE SUPPLY CO., 84 VanBraam St., Pittsburgh 19. Telephones: Grant 0724-25. PERSONNEL—*Manager:* Arthur F. Morrone. *Salesmen:* T. J. Shuttleworth, C. R. Allen. AREA SERVED—Western Pennsylvania and West Virginia.

SOUTH CAROLINA

TRIO AMUSEMENT CO., North Main St., Box 394, Greenville. Telephones: 2-7111, 2-7401 — (Emergency Night) 3-2193. PERSONNEL — *Owner and Manager:* Ed C. Curdts. *General Manager:* Fred S. Curdts. AREA SERVED—South Carolina, North Carolina.

SOUTH DAKOTA

AMERICAN THEATRE SUPPLY, 316 S. Main Ave., Sioux Falls. Telephones: 1346, 4128. PERSONNEL—*Owner and Manager:* A. E. Trotzig. *Service Engineer:* E. Robbins. AREA SERVED—South Dakota, Southwestern Minnesota, Northwestern Iowa.

TENNESSEE

MONARCH THEATRE SUPPLY, INC., 492 S. Second St., Memphis 2. *(See display listing on page 468.)*

NATIONAL THEATRE SUPPLY, 412-414 S. 2nd St., Memphis 2. Telephones: 5-6616—(Emergency Night) 2-8843, 4-2754, 36-3066, 2-7404. PERSONNEL—*Manager:* R. L. Bostick. *Assistant Manager:* C. C. Bach. *Salesman:* C. E. Sumner. *Service Engineer and Salesman:* O. O. Bland. *Counter Salesmen:* H. H. Lewis, C. E. Matthews AREA SERVED — Western Tennessee, Arkansas, Northern Mississippi, Southeastern Missouri.

TRI-STATE THEATRE SUPPLY, 318 S. Second St., Memphis 3. *(See display listing on this page.)*

TEXAS

ASSOCIATED INDUSTRIES CO., INC., 306 S. Pearl St., Dallas 1. *(See display listing on this page.)*

HARDIN THEATRE SUPPLY CO., 714 S. Hampton Rd., Dallas 11. *(See display listing on this page.)*

* Listing not confirmed by Supply Dealer

HARDIN THEATRE SUPPLY CO., 714 S. Hampton Road, Dallas 11. Telephone: M-2235 (24 hour service). PERSONNEL—*Owner:* J. H. Hardin. *Office Manager:* Paul W. Humphries. *Salesman:* M. A. Hatchl. AREA SERVED—Texas, New Mexico, Oklahoma, Louisiana, Arkansas.

AUTHORIZED DISTRIBUTOR for

WORLD-WIDE Century DISTRIBUTION

STRONG Lamps
SNAPLITE Lenses
VOCALITE Screens
REBUILT Theatre Equipment

PROJECTION and SOUND EQUIPMENT

A WORLD-WIDE REPUTATION for Top Quality and Dependability.

MODERN THEATRE EQUIPMENT CO., 214 S. St. Paul St., Dallas. Telephones: Riverside 5009—(Emergency Night) Madison 2547. PERSONNEL—*Owner:* H. S. Sorenson. AREA SERVED—Texas.

EXCLUSIVE DISTRIBUTOR

MOTIOGRAPH

MOTIOGRAPH and STRONG Projection Arc Lamps
IMPERIAL Motor Generators
IRWIN Seating Company Chairs
U. S. AIRCO Cooling Equipment
LEEDOM Carpets
UNIVERSAL Frames
WAGNER Marquees
NATIONAL Carbons
And a Complete Line of Supplies

SOUND PROJECTORS ARC LAMPS and DRIVE-IN EQUIPMENT

Designed and built by specialists for over 50 years

See Complete Data on Pages 278, 412, 413, 419, of This Volume.

SALES AND SERVICE BY EXPERTS!

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

See NATIONAL for BEVELITE LETTERS

SIMPLEX SOUND AND PROJECTION

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need . . . . . .

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

SOUTHWESTERN THEATRE EQUIPMENT CO., 1416 Main Street, Houston 2. Telephone: Capitol 9906. 2010 Jackson Street, Dallas 1. Telephone: Central 8579. PERSONNEL—*Owners:* A. Mortensen, George Heck, J. W. Hill. *Dallas Manager:* J. O. Hill. *Houston Manager:* Alex McKinzie. AREA SERVED—Texas.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Sales and Service on:

• RCA SOUND SYSTEMS • RCA DRIVE-IN THEATRE EQUIPMENT • BRENKERT BX-80 PROJECTORS • BRENKERT BX-60 PROJECTORS • BRENKERT ARC LAMPS • BRENKERT BASES • BRENKERT MAGAZINES • RCA MOTOR GENERATORS • RCA PLATE RECTIFIERS • RCA TUBE RECTIFIERS • MOHAWK CARPETS • WESTINGHOUSE LAMPS • INTERNATIONAL CHAIRS.

WESTERN SOUND & EQUIPMENT CO., 266 East First South St., Salt Lake City. Telephones: 3-9974—(Emergency Night) 6-1532. PERSONNEL—*President:* Ted Lewis. *Vice-President:* Edward L. Fuller. AREA SERVED—Utah, Idaho, Western Wyoming, Eastern Nevada.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Sales and Service on:

• RCA SOUND SYSTEMS • BRENKERT PROJECTORS • BRENKERT ARC LAMPS • SNOWHITE SCREENS • RCA TUBE RECTIFIERS • MOHAWK CARPETS • INTERNATIONAL CHAIRS • WESTINGHOUSE LAMPS • GENERAL REGISTER TICKET MACHINES • GLOBE TICKETS • JOHNSON'S LIGHTNING CASHIERS • KOLLMORGEN LENSES • GOLDE GOLDBERG ELECTRIC REWINDERS • NEUMADE FILM CABINETS • ROYAL CHROME FURNITURE • NATIONAL CARBONS • ETC. - ETC. - ETC.

Dependable Consultation on Design - Engineering - Equipment

HERBER BROS., 408 S. Harwood St., Dallas 1. Telephone: Riverside 3553. PERSONNEL—*Partners:* E. P. and B. G. Herber. *Shop Foreman:* D. O. Hulse. AREA SERVED — Texas, Louisiana, Oklahoma, New Mexico, and part of Mexico.

MODERN THEATRE EQUIPMENT CO., 214 S. St. Paul St., Dallas. *(See display listing on page 469.)*

NATIONAL THEATRE SUPPLY, 300 S. Harwood St., Dallas 1. PERSONNEL—*Manager:* R. L. Bostick. *Assistant Manager:* F. R. Hansen. *Sales Manager:* S. M. Berry. *Salesmen:* M. J. Konemann, H. A. Moore, F. H. Morgan. *Counter Salesmen:* E. H. Cernosek, John C. Beck. AREA SERVED—Texas.

SOUTHWESTERN THEATRE EQUIPMENT CO., 2010 Jackson St., Dallas 1. *(See display listing on this page.)*

SOUTHWESTERN THEATRE EQUIPMENT CO., 1416 Main St., Houston 2. *(See display listing on this page.)*

INDEPENDENT FILM EXCHANGE, 216 University Ave., San Antonio. Telephone: P-7501 (Day or Night)—PERSONNEL — *Owner and Manager:* R. W. Barron. *Saleswoman:* Mrs. Mae Head. *Mechanic:* Chas. Breuning. AREA SERVED—Texas.

UTAH

INTER-MOUNTAIN THEATRE SUPPLY CO., 142 E. First South St., Salt Lake City 1. Telephone: 4-7821. PERSONNEL—Philip S. Guss.

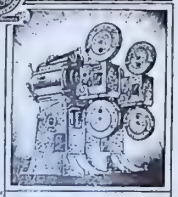
SERVICE THEATRE SUPPLY CO., 256 E. First South St., Salt Lake City 1. Telephones: 5-1223—(Emergency Night) Hollady 678, Salt Lake 5-6990. PERSONNEL—*President:* O. J. Hazen. *Vice-President:* A. C. Knox. *Installation:* J. A. Buggar. *Shipping:* Ken Jones. *Sales and Service:* Art Edualdson, C. O. Stewart. *Secretary:* Barbara Rowland. *Accounting:* S. Searcy. AREA SERVED—Salt Lake Film Exchange Territory.

WESTERN SOUND & EQUIPMENT CO., 266 E. First South St., Salt Lake City. *(See display listing on this page.)*

PERDUE CINEMA SERVICE, 36 Kirk Avenue S.W., Roanoke. Telephones: 2-8817—(Emergency Night) 5880. PERSONNEL—*Manager:* Roscoe E. Perdue. *Salesmen:* Eugene (Dick) Weaver, Nat Tanner. AREA SERVED —Western Virginia.

AUTHORIZED DeVRY DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brillante" Lenses
STABILARC Generators
HOLMES Equipment
GOLDE
PREMIER SOUTHERN Tickets
BALLANTYNE
WEAVER Reels and Changeovers
GRIGGS Theatre Chairs
VOCALITE Screens



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy — DeVRY

MODERN THEATRE SUPPLY, INC., 2400 - 3rd Ave., Seattle 1. Telephone: SEneca 4273. PERSONNEL—*Manager:* Lee W. Scott. *Decorator:* Al. Kielland, Jack Barber. *Portland, Ore.:* Pete Peterson, 220 - 4th St., Oswego Ore. *Missoula, Mont.:* Bill Fowers, 220 W. Central, Missoula, Mont. AREA SERVED—Washington, Oregon, Montana, Idaho, Alaska.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Theatre Equipment

SUPPLIES • DECORATIONS • DRAPES and DESIGNS.

Everything Modern for Your Theatre

MODERN THEATRE *Supply*

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING
BEVELITE LETTERS

See **NATIONAL** *for* **CRESTWOOD CARPET**

SIMPLEX SOUND AND PROJECTION

Equipment and Supplies for Every Theatre Need . . . . .

DRIVE-IN EQUIPMENT
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Your RCA THEATRE SUPPLY DEALER Has

BRENKERT BX "80" Projectors
BRENKERT BX "60" Projectors
RCA Sound Systems
BRENKERT Arc Lamps
RCA DRIVE-IN Equipment
INTERNATIONAL Chairs
MOHAWK Carpets
WESTINGHOUSE Lamps
SNOWHITE Screens
ALLEN Carpet Lining
RCA Motor Generators
RCA Plate Rectifiers
RCA Tube Rectifiers
RCA Speaker Systems
Rectigons

EVERYTHING for the Theatre!

WESTERN THEATRE EQUIPMENT CO., INC., 259 E. First South St., Salt Lake City 2. Telephone: 4-0556. PERSONNEL—*Salesman:* J. A. Bulmer. *Store:* C. Bulmer.

VIRGINIA

NORFOLK THEATRE SUPPLY CO., 2706 Colley Ave., Norfolk 8. Telephones: 5-3818 (Emergency Night) 5-1744, 3-5337. PERSONNEL — *Owner:* Morris Ornoff. *Office Manager:* Olive Rykbos.

PERDUE CINEMA SERVICE, 36 Kirk Ave., S.W., Roanoke. *(See display listing on page 470.)*

WASHINGTON

AMERICAN THEATRE SUPPLY CO., INC., 1504 14th Ave. at E. Pike, Seattle 22. Telephones: East 7199, Capitol 2023. PERSONNEL — *President:* R. E. W. Fairleigh. *Treasurer:* A. L. Hansen. *Sales Manager:* Richard Fairleigh. AREA SERVED—Pacific Northwest and California.

MODERN THEATRE SUPPLY, INC., 2400-3rd Ave., Seattle 1. *(See display listing on page 470.)*

NATIONAL THEATRE SUPPLY, 2319 2nd Ave., Seattle 1. Telephones: MAin 3421-3422 — (Emergency Night) ALder 5312, RAinier 7324. PERSONNEL—*Manager:* Oscar L. Chiniquy. *Salesmen:* Jack H. Blum, Donald G. Farnham. *Storeman:* Everett L. Clawson. AREA SERVED—Washington, Oregon, Montana, Idaho, Alaska.

B. F. SHEARER COMPANY, 2318 2nd Ave., Seattle 1. Telephones: ELiot 8247—(Emergency Night) GRant 4466, MElrose 8766, AValon 9006, ALder 8362. PERSONNEL—Til Shearer, E. R. Bechtel, C. H. Beresford, Dan Larsen. AREA SERVED — Montana, Washington, Panhandle of Idaho, Territory of Alaska.

WESTERN THEATRE EQUIPMENT CO., INC., 2224 2nd Ave., Seattle 1. Telephone: ELiot 3806. PERSONNEL—*Manager:* L. A. Pierre. *Store:* E. F. Becker. AREA SERVED —Western Washington, Alaska.

WESTERN THEATRE EQUIPMENT CO., INC., West 528 First Ave., Spokane 2. Telephone: Riverside 9706. PERSONNEL — *Manager:* R. W. Hutchins. *Store:* M. Saunders. AREA SERVED—Eastern Washington, Idaho, Montana.

WEST VIRGINIA

CHARLESTON THEATRE SUPPLY CO., 506 Lee St., Charleston 21. Telephones: 34-413 — (Emergency Night) 21-045. PERSONNEL—*Owner and Manager:* N. E. Merhie. *Salesmen:* Larry E. Little, Albert E. Merhie. *Chief Mechanic:* Larry E. Little. AREA SERVED — Southern and Central West Virginia, Eastern Ohio, Eastern Kentucky, Western Virginia.

LOVETT & CO., 333 W. Pike St., Clarksburg. *(See display listing on this page.)*

WISCONSIN

VIC MANHARDT CO., INC., 1705 W. Clybourn St., Milwaukee 3. *(See display listing on this page.)*

NATIONAL THEATRE SUPPLY, 1027 N. 8th St., Milwaukee 3. Telephones: Marquette 8-7333—(Emergency Night) Hopkins 2-1223. PERSONNEL—*Manager:* A. J. Larsen. *Office Manager:* M. Anacker. *Salesman:* R. J. Schmitz. AREA SERVED—Wisconsin, Upper Michigan.

THE RAY SMITH COMPANY, 710 W. State St., Milwaukee 3. Telephones: Marquette 8-2100—(Emergency Night) West 3-2100, West 4-4637-M. PERSONNEL—*Owner and Manager:* Ray A. Smith. *Salesman:* Jerome P. Kurz. *Service Man:* Alex Zsebe.

THEATRE EQUIPMENT & SUPPLY CO., 641 N. 7th St., Milwaukee 3. Telephones: DAly 8-0123 — (Emergency Night) EDgewood 2-4686. PERSONNEL—*Manager:* H. R. Vogel. AREA SERVED—Wisconsin, Upper Peninsula of Michigan.

STAR THEATRE SUPPLY CO., 36 N. Cascade St., Osceola. PERSONNEL—*Manager:* Emil Nelson.

LOVETT & CO., 333 W. Pike St., Clarksburg. Telephones: Clarksburg 6360—(Emergency Night) 5866. PERSONNEL—*Manager:* D. E. Lovett. *Sales Representative:* Gray Barker. *Sales Dept.:* Virginia Howell. *Mascot:* "Maisie". AREA SERVED—West Virginia, Virginia, Maryland, Pennsylvania.

AUTHORIZED DEVRY DEALER

Distributors for
DeVRY Motion Picture Projectors and Sound Systems
DeVRY In-Car Speakers and "Brilliante" Lenses
STRONG Lamps and Rectifiers
STABILARC Motor Generators
RADIANT Screens
NEUMADE Film Cabinets Table, Rewinds, Splicers
GOLDE Rewinds
ALTEC "Voice of the Theatre" Speaker Systems
NATIONAL Carbons



NEW DeVRY "12000" THEATER PROJECTOR

Your Best Buy—DeVRY

VIC MANHARDT CO., INC., 1705 W. Clybourn St., Milwaukee 3. Telephones: DIvision 2-8344-45—(Emergency Night) Bluemond 8-4935, Glenview 3-1687, Sheridan 4-6930. PERSONNEL—*President:* Victor R. Manhardt. *Manager:* Charles La Fevre. Ed. N. Howe, Richard V. Manhardt. AREA SERVED—Milwaukee Film Territory, Northern Wisconsin, Upper Michigan.

RCA THEATRE SUPPLY DEALER

EVERYTHING for the Theatre!

SEE DETAILED LISTING ABOVE

Complete Sales and Service on:

• RCA SOUND SYSTEMS • DRIVE-IN THEATRE EQUIPMENT • BRENKERT PROJECTORS • BRENKERT ARC LAMPS • RCA SCREENS • RCA TUBE TYPE RECTIFIERS • CENTURY-ROTH GENERATOR SETS • MOHAWK CARPETS • INTERNATIONAL CHAIRS • WESTINGHOUSE LAMPS • GENERAL REGISTER TICKET MACHINES • COINOMETERS • KOLLMORGEN and BAUSCH and LOMB LENSES • AUTOMATIC REWINDS • NEUMADE FILM CABINETS • ROYAL METAL FURNITURE • NATIONAL CARBONS • Replacement parts for all types of equipment, Brooms, Dust Pans Cleaners and Soaps, and all Janitorial items.

Use our convenient mail order cards—No postage necessary. Convenient time payment plans available.

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
AMERICAN SEATING
WALKER SCREENS
CRESTWOOD CARPET
NATIONAL FANS & BLOWERS
GOVERNAIR AIR CONDITIONING

See NATIONAL for DRIVE-IN EQUIPMENT

SIMPLEX SOUND AND PROJECTION

BEVELITE LETTERS
ALUMINEX POSTER CASES
POPCORN MACHINES

NATIONAL THEATRE SUPPLY

Equipment and Supplies for Every Theatre Need

Factors Affecting the Operation of Brushes

Small in Size and Inexpensive, too Little Attention is Given Their Maintenance and Effect on Equipment

The continuing search by the Editors of THEATRE CATALOG for factual data relating to all manner of equipment and supplies used by theatres, and its eventual recording for the reference of the theatre man, turned up "BRUSHES" which is Chapter 13 of the new 4th Edition of the National Projector Carbon Handbook. Despite their minute size and price, this important theatre item merits attention.*

Most theatres are located in districts where direct current power supply is not available. In such cases, the operation of D.C. projection lamps requires the installation of some type of rectifying or converting device to change the alternating current supplied by the power lines to direct current for use at the arc. In many theatres a motor-generator set or some type of synchronous converter is used for this purpose and carbon brushes are required on the D.C. side of all machines of this type.

Reasonable attention to factors affecting the operation of brushes will be well repaid by the improved results and greater reliability of operation thus obtained.

As is true of all rotating equipment, careful attention should be given to the thorough lubrication of bearings. At the same time, care should be exercised to prevent oil getting on the commutator of the machine where it has a tendency to impair the mica insulation of the segments as well as to interfere with the operation of the brushes.

Accurate alignment of the edges of the brushes with the commutator segments and equal spacing of brushes around the periphery of the commutator are likewise essential to good commutation and cool operation of the unit. A convenient way to check brush spacing is to wrap a strip of paper tightly around the commutator and, with a pencil, mark the point at which the corresponding edge of each brush bears on the strip. Measuring the distance between these marks will then show whether or not the brush spacing is equal. If found unequal, this condition should be corrected, the method of correction depending on the construction of the machine.

It is obviously important to keep the brush holders and their supporting studs firmly secured. Loose brush holders permit vibration and displacement of the brushes from the correct position.

When new brushes are installed they should be sanded in to fit the commutator accurately. A good way to do this is to cut strips of sandpaper slightly wider than the brush. Raise a brush and place the strip of sandpaper under it with the rough side against the carbon. Let the brush down on the sandpaper and pull the latter through in the same direction as the commutator rotates, repeating this operation until all of the brushes have been sanded to full contact from edge to edge. It is not advisable to pull the strip of sandpaper back and forth under the brush as there is some play of the brush in its holder and this method of sanding tends to form a double face which prevents full contact from edge to edge.

The tension on all brushes should be as nearly the same as the adjustment provided on the brush holders will permit. The actual value of the tension should conform to the recommendation of the manufacturer of the brush grade in use. In most cases, a pressure of two pounds per square inch of brush contact face will give good results.

Maintenance of a good commutator surface merits careful attention on the part of the operator. Undercut commutators should be carefully inspected for the presence of side mica and where found it should be removed. Burned bar edges, streaks and minor defects in commutator surface can usually be removed by polishing with a commutator stone or with fine sandpaper secured to a block which has been formed to the radius of the commutator. Serious flat spots or deep grooves, however, require turning or grinding of the commutator. This should be done by a shop properly equipped to handle work of this character.

Until the commutator of a new machine becomes thoroughly seasoned, it is possible that the segments may loosen and high or low bars become apparent. The clamp or "V" ring of the commutator should be examined from time to time and, when evidence of looseness is discovered, firmly tightened. This should be done when the machine is hot. Any evidence of failure of the mica insulation of the commutator segments should also receive immediate attention.

All electrical connections on the generating equipment should be kept clean and firm: This precaution includes the brush shunts — the flexible cables by means of which the brushes are connected to the electrical circuit. The terminals should be firmly secured to the brush holders or their mounting at the points provided for this purpose. Loose electrical connections are a frequent source of trouble on electrical equipment but one that is easily avoided by a moderate degree of attention.

The grade of brush used exerts a marked influence on the results obtained. On the commutators that are not undercut, that is, those on which the mica is flush with the copper, it is generally desirable to use a brush having a mild abrasive action to keep the mica worn down even with the metallic surface. If the mica is allowed to project above the surface, the brushes will not make firm contact with the copper and the resultant sparking will quickly develop burned bars and flat spots, necessitating regrinding of the commutator. On undercut commutators, which are the general rule today, nonabrasive electrographitic brushes give excellent results on most generating equipment used in the projection room. This type of brush has low friction and excellent commutating characteristics and is hard enough to maintain a good commutator polish under most operating conditions. Sometimes a slight spotting or streaking of the commutator occurs when the arc is struck which the nonabrasive electrographitic brush cannot entirely remove before striking the arc again. This condition can be remedied by polishing the commutator surface occasionally with smooth sandpaper. However, to avoid the need for this attention, some operators prefer to use a brush with a slight polishing action, enough to remove this incipient burning but not sufficiently abrasive to cause appreciable commutator wear. Graphite or graphite-carbon grades are usually preferred for this purpose. The use of artificially lubricated brushes or the application of lubricant to the commutator surface is not recommended when the mica is undercut and is unnecessary when the proper grade of brush is used.

The grade of brush supplied by the manufacturer of the equipment will generally give satisfactory performance since careful attention is given to brush selection by designing engineers. Distributors of "National" Projector Carbons also carry in stock "National Pyramid" Brushes in suitable grades and sizes for all popular makes of motion picture theatre current converting equipment. Replacement brushes of correct grade can thus be obtained without delay from the same source as other theatre supplies. There are cases, however, where operating conditions or other causes indicate the need for a brush of special characteristics. In such cases an outline of your difficulties, mailed to the nearest Division Office of National Carbon Company, Inc., or a discussion of the trouble with a representative of the Company will secure the recommendation of a grade to meet the requirements of your specific case.

* *Copyright 1949 by National Carbon Company, Inc. Reprinted with permission of the copyright owners.*

Supply Dealers of the Dominion of Canada

Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

ALBERTA

DOMINION SOUND EQUIPMENTS LTD., 709 8th Ave., W., Calgary. Telephone: M-9947. PERSONNEL — *Manager:* W. F. Graham. *Salesman:* A. T. Linden. AREA SERVED—Alberta.

SHARP'S THEATRE SUPPLIES, Film Exchange Bldg., Calgary. Telephones: M-4076, M-7266. PERSONNEL — *Owner and Manager:* W. G. Sharp. AREA SERVED—Alberta, Saskatchewan, Eastern British Columbia.

BRITISH COLUMBIA

DOMINION SOUND EQUIPMENTS LTD., 820 Cambie St., Vancouver. Telephones: Ma. 2181-82—(Emergency Night) Pa. 4231. PERSONNEL—*District Manager:* L. G. Sigurdson. *Engineers:* A. Jackson, J. E. F. Graham, G. T. New. *Salesman:* R. C. Benton. AREA SERVED—British Columbia, Vancouver Island.

DOMINION THEATRE EQUIPMENT CO., Ltd., 847 Davie St., Vancouver. Telephones: Ma. 6634 (Emergency Night) Bayview 7236-L. PERSONNEL—*President:* D. V. K. Fairleigh. *Sales Manager:* C. M. Rae. *Counter Man:* J. A. King. AREA SERVED—All of Canada.

EMPIRE AGENCIES, Ltd., 573 Hornby St., Vancouver. Telephone: MArine 6638. PERSONNEL—*Managing Director:* P. Harmon. *Secretary-Treasurer:* James S. Crabb. AREA SERVED—British Columbia, Yukon Territory.

GAUMONT-KALEE, Ltd., Film Exchange Bldg., Burrard at Davie St., Vancouver. Telephone: MArine 3408. PERSONNEL—*Branch Manager:* Marvin H. Thoreau. AREA SERVED—Western Canada.

GENERAL THEATRE SUPPLY CO., LTD., 963 Granville Street, Vancouver. Telephones: MArine 7933 (Emergency Night) FAirmont 1931-R, HAstings 5748-L. PERSONNEL — *Manager:* W. "Bill" Forward. *Counter:* "Gordie" Brown. AREA SERVED —British Columbia, Alberta, Yukon Territory.

LA SALLE RECREATIONS, LTD. (Theatre Chair & Carpet Divn.), 945 Granville St., Vancouver. Telephones: Ma. 5034—(Emergency Night) CE. 3929. PERSONNEL —*President and Managing Director:* S. A. Lechtzier. *Vice President:* M. R. Lechtzier. AREA SERVED—Entire Dominion of Canada.

THEATRE EQUIPMENT SUPPLY CO., 906 Davie St., Vancouver. Telephones: MArine 7033—(Emergency Night) MA. 8886. PERSONNEL—*Owner:* H. I. Howard. *Sales and Service:* J. Dibben. *Counter Man:* E. R. Petch. AREA SERVED—British Columbia, Alberta, Yukon.

MANITOBA

DOMINION SOUND EQUIPMENTS LTD., 65 Rorie St., Winnipeg. Telephone: 92323. PERSONNEL — *District Manager:* D. E. Daniel. *Salesman:* G. R. Steffens. *Engineers:* H. R. Williams, E. J. Blaney. AREA SERVED—Western Ontario, Manitoba, Saskatchewan.

GENERAL THEATRE SUPPLY CO., LTD., 185 Portage Ave., E., Winnipeg. Telephone: 95795. PERSONNEL—*Manager:* C. Maybee. AREA SERVED — Manitoba, Saskatchewan, Northern Ontario.

J. M. RICE & CO., 202A Canada Bldg., Winnipeg. Telephones: 25371 — (Emergency Night) 404070, 65885. PERSONNEL—*Owner:* J. M. Rice. *Manager:* J. L. Rice. *Salesmen:* Edward Haugen, Charles Carphin, Howard E. Kinnear. *Counter Man:* W. Leckie. AREA SERVED—Manitoba, Saskatchewan, Alberta, Western Ontario.

NEW BRUNSWICK

DOMINION SOUND EQUIPMENTS LTD., 10 Germain St., Saint John. Telephone: 3-3031. PERSONNEL—*Manager:* J. E. Tagg.

NEWFOUNDLAND

MOTION PICTURE SUPPLIES, LTD., 22 Prescott St., Saint John's. Telephone: 5599. PERSONNEL—*Managing Director:* Derek Marshall. Products Sold: National Theatre Supply Line.

NOVA SCOTIA

DOMINION SOUND EQUIPMENTS LTD., 76 Hollis St., Halifax. Telephones: 3-8211, 3-8212 (Emergency Night) 2-3370, 2-3371. PERSONNEL — *District Manager:* J. McEwan. *District Service Supervisor:* C. J. Gilbert. AREA SERVED—Nova Scotia, New Brunswick, Prince Edward Island, Island and Province of Newfoundland.

ONTARIO

DOMINION SOUND EQUIPMENTS LTD., 114 Bond St., Toronto 2. Telephone: WAverly 6131. PERSONNEL—*District Manager:* C. C. Curran. *Manager, Equipment Sales and Service:* F. S. Hastie. *Salesmen:* J. D. McCulloch, H. Eve. AREA SERVED—Ontario.

GAUMONT-KALEE, LTD., Head Office: 591 Yonge St., Toronto. Telephones: MIdway 1154-55-56. PERSONNEL — *General Manager:* Edward L. Harris. *Sales Manager:* R. E. Ferguson. *Chief Engineer:* H. Goldin. AREA SERVED—Ontario.

GENERAL THEATRE SUPPLY CO., LTD., 104 Bond St., Toronto 2. Telephone: EL 9307. PERSONNEL — *President:* P. D. Brown. *Supervisor Sound:* G. Cuthbert. *Supervisor Projection:* T. C. Hoad. AREA SERVED—Ontario.

PERKINS ELECTRIC CO., LTD., 277 Victoria St., Toronto. Telephones: ELgin 6209 —(Emergency Night) HOward 6026. PERSONNEL—*Manager:* R. V. Shale. *Salesmen:* R. King, M. Denby, A. Glanfield. *Sound Division:* W. MacDonald. *Counter Man:* A. Davidson. *Shipper:* Vic Kireuff. AREA SERVED—Ontario.

THE ROBERT SIMPSON COMPANY, LTD., Special Contract Division, Toronto. PERSONNEL—*Manager, All Branches:* L. E. Wicklum. *Salesman:* E. W. Bryant. *Western Provinces:* L. Ruddell, office Regina. *Montreal:* M. Martin. AREA SERVED—Dominion of Canada.

QUEBEC

DOMINION SOUND EQUIPMENTS LTD., 4040 St. Catherine St., W., Montreal. Telephone: FI. 9663. PERSONNEL—*Head Office —Vice President and General Manager:* F. E. Peters. *General Sales Manager:* Lloyd C. Pearson. *Supervisor, Sales Information:* P. L. Keppie. *District Office—Manager Equipment, Sales and Service:* W. E. Carrick. *Salesmen:* R. C. Byers, A. Lalumiere, B. H. Lavell.

GAUMONT-KALEE, LTD., 1200 St. Alexander St., Montreal 2. Telephone: Marquette 3150. PERSONNEL—*Branch Manager:* R. Delorme. AREA SERVED—Eastern Canada.

Simplex ★★★★ Four Star

SOUND SYSTEMS and PROJECTION EQUIPMENT

For Theatres of Every Size

Distributed in Canada By

GENERAL THEATRE SUPPLY CO. LTD.

MONTREAL, TORONTO, WINNIPEG, VANCOUVER

HERTNER TRANSVERTERS
PEERLESS MAGNARC LAMPS
BAUSCH & LOMB LENSES
NATIONAL RECTIFIERS
SIMPLEX HIGH LAMPS
SNAPLITE LENSES
WALKER PLASTIC MOULDED SCREENS
STRONG ARC LAMPS
ROSSKOTE LENSES

Ashcraft Arc Lamps
Strong Rectifiers
Robin Imperial Generators

Northern Electric
"Voice of the Theatre"
SOUND EQUIPMENTS

Motiograph Projectors
•
Century Projectors

RCA *Sound Equipments*

DOMINION SOUND EQUIPMENTS LIMITED SERVICE AND COMPLETE THEATRE SUPPLIES FROM COAST TO COAST

GENERAL THEATRE SUPPLY CO., LTD., 288 St. Catherine St., W., Montreal 18. Telephones: Plateau 3438, 3439 (Emergency Night) Dollard 5009. PERSONNEL—*District Manager:* H. H. Burko. *Sales Engineer:* W. K. Reason. *Counter Salesman:* W. Mason. AREA SERVED—Quebec and Maritime Provinces.

RCA VICTOR CO., LTD., 1001 Lenoir St., Montreal 30. Products Sold: RCA Theatre and Sound Equipment.

SASKATCHEWAN

DOMINION SOUND EQUIPMENTS LTD., 2300 Dewdney Ave., Regina. Telephone: 91442. PERSONNEL—H. B. Grimes.

Supply Dealers of the Rest of the World

Comprehensive Listing of Names, Addresses, Personnel, Products, and the Areas Served

ALGERIA

WESTERN ELECTRIC CO. (FRANCE), 47 Rue Michelet, Algiers. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Algeria, Tunisia and Morocco.

ARGENTINA

CIA COMERCIAL CONDOR, Sarmiento 2149, Buenos Aires. PERSONNEL—Carlos Glucksmann. Products Sold: National Theatre Supply Line.

RCA VICTOR ARGENTINA, Bartolome Mitre 1961, Buenos Aires. Products Sold: Theatre and Sound Equipment, Sound Recording Equipment.

SOC. ARG. DE IMPORTACION, Maipu 639, Buenos Aires. PERSONNEL—Dr. E. M. Etchegoin. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., INC., OF ARGENTINA, Rodriguez Pena 370, Buenos Aires. PERSONNEL—*Branch Manager:* H. V. Zeppelin. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Argentina, Paraguay, Uruguay.

ARUBA

DE VEER THEATRE CIRCUIT, P. O. Box 3, Aruba. Products Sold: National Theatre Supply Line.

AUSTRALIA

NATIONAL THEATRE SUPPLY CO. OF AUSTRALASIA, PTY., LTD., Box 29, G. P. O., Adelaide. Telephone: Central 2255. PERSONNEL—I. M. Cook. Products Sold: Gaumont-Kalee.

NATIONAL THEATRE SUPPLY CO. OF AUSTRALASIA, PTY., LTD., 316 Adelaide St., Brisbane. Telephone: B3789. PERSONNEL—R. Smith. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., Box 1826, G. P. O. Melbourne, New South Wales. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., 24 Hunter St., Newcastle, New South Wales. Products Sold: Westrex Corp. line.

*HARRINGTONS, PTY., LTD., 386 George St., Box 4146, G. P. O., Sydney, New South Wales. PERSONNEL—*Managing Director:* G. D. Cree. Products Sold: Raycophone Sound and Projection Equipment. AREA SERVED—Australia.

NATIONAL THEATRE SUPPLY CO. OF AUSTRALASIA, PTY., LTD., Film House, 251A Pitt St., Box 3191, Sydney, New South Wales. Telephone: M 2231. PERSONNEL—*General Manager:* A. L. Graham. Products Sold: Gaumont-Kalee. COUNTRIES SERVED—Australia, Tasmania.

RCA PHOTOPHONE OF AUSTRALIA, PTY., LTD., 221 Elizabeth St., Sydney, New South Wales. Products Sold: Theatre and Sound Equipment.

*RAYMAC SUPPLIES, PTY., LTD., 230 and 270 Elizabeth St., P. O. Box 3787, G. P. O., Sydney, New South Wales. Products sold: Projectors, Sound Systems, Lighting Equipment.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., Broughton House, 181 Clarence St., Sydney, New South Wales. PERSONNEL—*Branch Manager:* Robert Hill. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., Box 999M, G. P. O. Brisbane, Queensland. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., 197 Esplanade, Cairns, Queensland. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., Box 32, P. O. Rockhampton, Queensland. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., Box 239, P. O. Townsville, Queensland. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., 62 Hundle St., Adelaide, Southern Australia. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., 2 William St., Perth, Western Australia. Products Sold: Westrex Corp. line.

BARBADOS

H. C. ROSE, Kaladan Lady Meade Gardens, Bridgetown. Products Sold: Westrex Corp. line.

BELGIUM

BRITISH EQUIPMENT, S.A., 64 Rue des Plantes, Brussels. Products Sold: Gaumont-Kalee.

BROCKLISS SIMPLEX S.A., 109 Rue des Plantes, Brussels. Products Sold: National Theatre Supply Line. COUNTRY SERVED—Belgium.

* Listing not confirmed by Supply Dealer

CINEMATEX, 103 Rue des Plantes, Brussels. Products Sold: Cinematex Amplification, Carbons, Accessories.

FIBROCIT, 26 Rue Masui, Brussels. Products Sold: Theatre Seats.

SOCIETE BELGE INDUSTRIELLE, S.A., 14 Square Marie-Louise, Brussels. Products Sold: RCA Theatre and Sound Equipment.

WESTERN ELECTRIC CO. (FRANCE), 20 Place des Martyrs, Brussels. PERSONNEL—*Branch Manager:* G. F. Van Weyenbergh. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Belgium and Luxembourg.

BERMUDA

BERMUDA GENERAL THEATRES, LTD., Somers Building, Hamilton. Products Sold: RCA Theatre and Sound Equipment.
C. H. MONKS, Colony Theatre, Hamilton. Products Sold: National Theatre Supply Line.

BOLIVIA

PALACIOS Y CIA, Casilla de Correo 648, La Paz. Products Sold: National Theatre Supply Line.

S. A. C. I., Suers. de Simon F. Bedoya, Casilla 346, La Paz. Products Sold: RCA Theatre and Sound Equipment.

BRAZIL

I. A. EKERMAN, Rua Mexico 41-7, Rio de Janeiro. Products Sold: National Theatre Supply Line.

RCA VICTOR RADIO, S.A., Caixa Postal 2726, Rio de Janeiro. Products Sold: Theatre and Sound Equipment.

WESTERN ELECTRIC CO. OF BRAZIL, Edificio Moda, 8th Floor, Rua Senador Dantas 15, Rio de Janeiro. PERSONNEL—*Branch Manager:* F. H. Gildemeyer. Products Sold: Westrex Corp. line.

I. A. EKERMAN, Rua Conselneiro Nebias 263-1°, Sao Paulo. Products Sold: National Theatre Supply Line.

WESTERN ELECTRIC CO. OF BRAZIL, Rua dos Guaimazes 151, Sao Paulo. Products Sold: Westrex Corp. line.

BRITISH GUIANA

M. I. JARDIM, 118 Cowan St., Georgetown. Products Sold: Westrex Corp. line.

SPROSTONS, LTD., Georgetown. Products Sold: Gaumont-Kalee.

BRITISH HONDURAS

MACMILLAN BROTHERS, Belize. Products Sold: RCA Theatre and Sound Equipment. AREA SERVED—Colony of British Honduras.

BURMA

A. SCOTT & CO., LTD., 528 Merchant St., Rangoon. Products Sold: Gaumont-Kalee.

CEYLON

CEYLON THEATRES LTD., Regal Theatre, 8 Parsons Road, Colombo. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. OF INDIA, Iceland Buildings, Galle Road, Colombo. Products Sold: Westrex Corp. line.

CHILE

CORPORACION DE RADIO DE CHILE, S.A., Casilla 1407, Santiago. Products Sold: RCA Theatre and Sound Equipment.

*D. GOLUBOFF, Tenderini 137, Santiago.

OSSA & MAX, Casilla 9820, Santiago. Products Sold: National Theatre Supply Line.

WESTERN ELECTRIC CO. (ANDEAN), Edificio Sud America, Bandera Esquina Agustinas, Santiago. Products Sold: Westrex Corp. line.

CHINA

GOLDMONT CORP., LTD., 28 West Bund St., Canton. PERSONNEL—Luther Chang. Products Sold: National Theatre Supply Line and Ampro Equipment.

ELEPHANT RADIO, Norman F. C. Li & Co., 209 Bank of East Asia Bldg., 10 Des Voeux Road, Central, Hongkong. Products Sold: Standard, rebuilt, and custom built equipment.

GOLDMONT CORP., LTD., 5th Floor, Taiping Bldg., 16 Queen's Rd., Central, Hongkong. PERSONNEL—Harry Taam. Products Sold: National Theatre Supply Line and Ampro Equipment.

MANNERS ENGINEERING, LTD., Mercantile Bank Building, 7 Queen's Road, Central, Hongkong. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. OF ASIA, 7 Yuk Saw Street, Hongkong. Products Sold: Westrex Corp. line.

GOLDMONT CORP., LTD., 220 Szechuen Road C., Shanghai. PERSONNEL—Peter Chang, Robert Tsai. Products Sold: National Theatre Supply Line and Ampro Equipment.

RCA VICTOR CO. OF CHINA, 356 Peking Road (Eastern), Shanghai. PERSONNEL—Fred Jones. Products Sold: Theatre and Sound Equipment. AREA SERVED—China.

WESTERN ELECTRIC CO. OF ASIA, 88 Museum Rd., Shanghai. PERSONNEL—*Branch Manager:* W. E. Kollmyer. *Chief Engineer:* Harry Y. H. Moore. Products Sold: Westrex Corp. line. AREA SERVED—China, Hongkong.

GOLDMONT CORP., LTD., 207 Taku Road, Tenth Area, Tientsin. PERSONNEL—S. T. Chen. Products Sold: National Theatre Supply Line and Ampro Equipment.

NORTH CHINA THEATRE SUPPLY CO., 223 Chung Cheng (Victoria) Road, Victoria Building, Tientsin (10). PERSONNEL—*Manager:* Nick Boicovich.

WESTERN ELECTRIC CO. OF ASIA, 30 Da Wen Li, Taku Road, Tientsin. Products Sold: Westrex Corp. line.

COLOMBIA

J. GLOTTMAN, S.A., Carrera 9a, No. 16-20, Bogota. PERSONNEL—*Manager:* Jack Glottman. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment.

WESTERN ELECTRIC CO. (CARIBBEAN), Calle 23, No. 5-90, Bogota. Products Sold: Westrex Corp. line.

CINE COLOMBIA, S.A., Medellin. Products Sold: Gaumont-Kalee.

COSTA RICA

JOSE MARIN CANAS, Apartado 372, San Jose. Products Sold: Westrex Corp. line.

PERRY GIRTON, Apartado 225, San Jose. Products Sold: RCA Theatre and Sound Equipment.

PAN AMERICAN TRADING CO., LTD., Apartado 2018, San Jose. PERSONNEL—*Owner and Manager:* Francisco Pena. Products Sold: National Theatre Supply Line. AREA SERVED—Nicaragua, Honduras, Guatemala, Salvador, Costa Rica.

JOSE RAVENTOS, Apartado 1147, San Jose. Products Sold: RCA Theatre and Sound Equipment.

CUBA

NATIONAL SUPPLY, S.A., Consulado 219, Habana. PERSONNEL—P. Saenz. Products Sold: National Theatre Supply Line.

SELECT CINEMA SUPPLY, 113 Trocadero St., Habana. PERSONNEL—Sanchez, Victoria. Products Sold: De Vry, Ballantyne, and Miscellaneous.

STANDARD ELECTRIC, S.A. OF CUBA, Trocadero 163, Habana. Products Sold: RCA Theatre and Sound Equipment.

VINCENT VAZQUEZ, Calle Consulado No. 208, Habana. Products Sold: Motiograph.

WESTERN ELECTRIC CO. (CARIBBEAN), Industria 307, Habana. PERSONNEL—*Branch Manager:* J. J. deBoer. Products Sold: Westrex Corp. line.

CURACAO

EL LOUVRE, S.A., P. O. Box 138, Curacao. Products Sold: RCA Theatre and Sound Equipment.

MARCHENA-MORON & CO., P. O. Box 13, Curacao, N. W. I. Products Sold: National Theatre Supply Line. AREA SERVED—Curacao.

DENMARK

BANG & OLUFSON, Jernbanegade 4, Copenhagen. PERSONNEL—L. A. O. Hansen. Products Sold: National Theatre Supply Line.

NORDISK KINOTEKNIK A/S, Frederiksberggade 16, Copenhagen. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., A/S, Vesterport 481, Copenhagen. PERSONNEL—*Branch Manager:* H. T. Petersen. Products Sold: Westrex Corp. line.

* Listing not confirmed by Supply Dealer

DOMINICAN REPUBLIC

CLAUDIO FERNANDEZ, Apartado de Correos 927, Ciudad Trujillo. Products Sold: RCA Theatre and Sound Equipment.

JOAQUIN GINEBRA, Apartado 834, Ciudad Trujillo. Products Sold: National Theatre Supply Line. AREA SERVED—Dominican Republic.

DUTCH GUIANA

SURINAAMSCHE RADIO HANDEL, P. O. Box 609, Paramaribo, Suriname. Products Sold: RCA Theatre and Sound Equipment.

ECUADOR

MR. JAIME PUIG AROSEMENA, P. O. Box 89, Guayaquil. Products Sold: Gaumont-Kalee.

DISTRIBUTORES ECUATORIANA de FILMS S.A., Apartado 1, Quito. Products Sold: National Theatre Supply Line.

ELECTRONICA S.A., Guayaquil. PERSONNEL—*Owner and Director:* Luigi Rota. *Manager:* Emilio Bini. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment. COUNTRY SERVED—Coast Zone of Ecuador.

SOCIEDAD RADIOTECNICA ECUATORIANA, Apartado 414, Quito. PERSONNEL—*Owner and Director:* Luigi Rota. *Manager:* Marcello Cameo. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment. COUNTRY SERVED—Ecuador.

EGYPT

ISIDORE LEVY, 22 bis, Avenue Fouad 1st, Alexandria. Products Sold: Projection Equipment, Carbons.

W. A. LANCASTER (Selo Stores), 34, Fouad St., Alexandria. Products Sold: Projection, Lighting and Amplifying Equipment.

NORTH EAST AFRICA TRADING CO., S.A.E., Head Office: 31 Rue Cherif Pacha, Alexandria. Cinema Dept.: 23 Sh. Amin Pacha Sami (Kasr el Ani), Cairo. PERSONNEL—*Manager:* H. Temchine. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—Africa, Egypt, and Anglo-Egyptian Sudan.

WESTERN ELECTRIC CO. (NEAR EAST), 22 (Bloc C) Rue Fouad ler, Alexandria. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Egypt, Greece, Iran, Iraq, Arabia, Abyssinia, Eritrea, Aden; Italian, French, and British Somaliland; Syria, Lebanon, Palestine.

ELECTRICAL ENGINEERING OFFICE, Taher El-Lozy Bey, 21 Soliman Pasha St., Cairo. Products Sold: RCA Theatre and Sound Equipment.

J. GREEN & CO., 147 Mohamed Bey Farid St., Cairo. Products Sold: Gaumont-Kalee, De Vry.

W. A. LANCASTER, Head Office: 11 Emad El Dine St., Cairo. Sales: 4, Haret Soufi (Sharia Adly Pacha), Cairo. Products Sold: Projection, Lighting and Amplifying Equipment. COUNTRIES SERVED—Palestine, Lebanon, Syria, Iraq, Transjordan, Persia, Abyssinia, Eritrea.

WESTERN ELECTRIC CO. (NEAR EAST), 9 Sharia Tewfick, Cairo. Products Sold: Westrex Corp. line.

ENGLAND

J. FRANK BROCKLISS, LTD., 27 John Bright St., Birmingham. Products Sold: National Theatre Supply Line.

G. B. KALEE LTD., 57 John Bright St., Birmingham. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., LTD., 49 Broad St., Birmingham. Products Sold: Westrex Corp. line.

G. B. KALEE LTD., 9 Park Lane, Cardiff. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., LTD., 10 Museum Place, Cardiff. Products Sold: Westrex Corp. line.

J. FRANK BROCKLISS, LTD., 67 Britannia House, Wellington St., Leeds. Products Sold: National Theatre Supply Line.

G. B. KALEE LTD., 17 Wellington St., Leeds. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., LTD., Wellington Chambers, Wellington Street, Leeds 1. Products Sold: Westrex Corp. line.

J. FRANK BROCKLISS, LTD., 167/169 Wardour St., London, W1. PERSONNEL—*Owner:* J. Frank Brockliss. *General Manager*—F. E. Durban. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—All of Europe.

RCA PHOTOPHONE, LTD., 43 Berkeley Square, London, W1. Products Sold: Theatre and Sound Equipment.

WESTERN ELECTRIC CO., LTD. Head Office: Liberty House, Regent St., London, W1. PERSONNEL—*Managing Director:* M. A. Goldrick. J. H. Riley. Products Sold: Westrex Corp. line.

J. FRANK BROCKLISS, LTD., 3, The Parsonage, Manchester. Products Sold: National Theatre Supply Line.

G. B. KALEE, LTD., 5, The Parsonage, Manchester. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., LTD., 1 North Parade, Deansgate, Manchester 3. Products Sold: Westrex Corp. line.

G. B. KALEE LTD., 2 Cross St., Newcastle. Products Sold: Gaumont-Kalee.

CROWE & CO., LTD., 52 Stowell St., Newcastle-on-Tyne. Products Sold: National Theatre Supply Line.

WESTERN ELECTRIC CO., LTD., 1 Charlotte Sq., Newcastle-on-Tyne 1. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO., LTD., Angel Row, Nottingham. Products Sold: Westrex Corp. line.

FIJI

MORRIS HEDSTROM LTD., Suva. Products Sold: Gaumont-Kalee.

FINLAND

G. W. BERG & CO., 14 Fabiangstan, Helsinki. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment.

PARVIS FILMI, P. O. Box 279, Helsinki. Products Sold: Gaumont-Kalee.

FRANCE

BROCKLISS SIMPLEX S.A., 295 Cours de la Somme, Bordeaux. Products Sold: National Theatre Supply Export Line.

D. G. FISCHEL FILS, 17 Rue Curie, Lyons. Products Sold: Theatre Chairs, Curtains.

D. G. FISCHEL FILS, 20 Rue Neuve Ste Catherine, Marseille. Products Sold: Theatre Chairs, Curtains.

BROCKLISS SIMPLEX S.A., 102 La Canabière, Marseille. Products Sold: National Theatre Supply Export Line.

CINEMATELEC, 29, Boulevard Longchamp, Marseille. Products Sold: Projectors and Equipment.

WESTERN ELECTRIC CO., 23 Cours Joseph Thierry, Marseille. Products Sold: Westrex Corp. line.

BROCKLISS SIMPLEX S.A., 6 Rue Guillaume Tell, Paris 17e. PERSONNEL—*General Manager:* Albert Gillet. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—France, North Africa, Switzerland, Belgium.

DIFFUSION MATERIEL CINEMATOGRAPHIQUE, 13 Rue Grange Boteliere, Paris 9. Products Sold: Microtecnica Projection Equipment.

D. G. FISCHEL FILS, 39 Rue de Tanger, Paris 19. Products Sold: Theatre Chairs, Curtains.

S. N. PATHE CINEMA, S.A., 6 Rue Francoeur, Paris 18e. PERSONNEL—P. Vidal. Products Sold: RCA Theatre and Sound Equipment. AREA SERVED—Algiers.

ROTATICKETS, S.A., Cosne (Nievre), Paris. Products Sold: Theatre Tickets.

STE. d'EQUIPEMENT CINEMATO-GRAPHIQUE, S.A., 26 Rue Lafayette, Paris 9e. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. (FRANCE), 120 Avenue des Champs Elysees, Paris. Products Sold: Westrex Corp. line.

GREECE

HEL. D. CARRA, 12, 28th October St., Athens. Products Sold: Gaumont-Kalee.

RADIO CORPORATION OF GREECE, 51 University Avenue, Athens. Products Sold: RCA Theatre and Sound Equipment.

SPYROS D. SKOURAS, 5 Santarosa St., Athens. Products Sold: National Theatre Supply Line.

GUATEMALA

ADOLFO RIOS, P. O. Box 97, Guatemala City. Products Sold: RCA Theatre and Sound Equipment.

RAMIRO SAMOYOAM, Callejon Concordia 17, Guatemala City. Products Sold: National Theatre Supply Line. COUNTRY SERVED—Guatemala.



T.M. REG. U. S. PAT. OFF.

DISTRIBUTORS THROUGHOUT THE WORLD

NATIONAL THEATRE SUPPLY *Export*

92 GOLD STREET, NEW YORK 7, U. S. A. CABLE ADDRESS, NATHESUPLY, N. Y.

E. F. TOPPE, Callejor Castillo No. 7, Guatemala City. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Guatemala, El Salvador, Honduras, and British Honduras.

HAITI

SOCIETE HAITIENNE d'AUTOMOBILES, Mallenbranche, Gentil Bogat & Co., Port-au-Prince. Products Sold: RCA Theatre and Sound Equipment.

HAWAII

CONSOLIDATED AMUSEMENT CO., LTD., Hawaii Theatre Bldg., Honolulu. PERSONNEL—*Manager Merchandise Department:* J. A. Madden. Products Sold: Simplex Projection and Sound Equipment, RCA Theatre and Sound Equipment, Heywood-Wakefield Seats.

HONDURAS

ESTEVEZ Y LAZARUS CLAMER, Apartado Postal 110, Tegucigalpa. Products Sold: RCA Theatre and Sound Equipment.

ICELAND

SNORRI P. B. ARNAR, Reykjavik. Products Sold: RCA Theatre and Sound Equipment.

OLAFUR GISLASON & CO., LTD., Hafnarstraeti, 10-12, Reykjavik. Products Sold: Gaumont-Kalee.

G. SIGMUNDSSON, Hafnarstraeti, 19-12, Reykjavik. Products Sold: Westrex Corp. line.

INDIA

EVERGREEN (BANGALORE) LTD., 3 Seshadri Road, Bangalore. Products Sold: National Theatre Supply Line.

EVERGREEN (BANGALORE) LTD., 18/147 Papaiah St., Gandhinagar, Bezwada. Products Sold: National Theatre Supply Line.

THE CINE AGENCY (INDIA) LTD., 18, New Queen's Road, Bombay 4. Products Sold: Philips Equipment and Accessories.

CINEFONES, 3, New Queen's Road, Bombay 4. PERSONNEL—S. N. Agarwal. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—India, Burma, Ceylon.

EASTERN ELECTRIC & ENGINEERING Co., 129 Mahatma Gandhi Road, Post Box 459, Bombay. PERSONNEL—*Manager:* V. G. Motwane. Products Sold: B.T.H. 35mm Theatre Equipment. COUNTRY SERVED—India.

EVERGREEN PICTURES CORP., Post Box No. 3515, Bombay 4. PERSONNEL—S. N. Kotwal. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—India, Burma, Ceylon.

GAUMONT-KALEE, LTD., Forbes Building, Home St., Bombay. Products Sold: Gaumont-Kalee.

PHOTOPHONE EQUIPMENTS, LTD., 9 Marine Lines, P.O. Box 394, Bombay. PERSONNEL — *Managing Director:* M. A. Fazalbhoy. Products Sold: RCA Theatre and Sound Equipment, National Theatre Supply Line. COUNTRIES SERVED—India, Pakistan, Burma, Ceylon.

RAVEL BROTHERS, 2/1 Prospect Chambers, 317 Hornby Road, Fort, Bombay 1. Products Sold: DeVry & Gardiner Sound, Da-Lite & Radiant Screens.

WESTERN ELECTRIC CO. OF INDIA, Metro House, Esplanade Road, Bombay 2. PERSONNEL — *Branch Manager:* R. F. Crews. Products Sold: Westrex Corp. line. AREA SERVED—India, Pakistan, Burma, Ceylon.

EVERGREEN PICTURES CORP., 11 Esplanade Row, East, Calcutta. Products Sold: National Theatre Supply Line.

GAUMONT-KALEE, LTD., Society Cinema, Corporation Place, Calcutta. Products Sold: Gaumont-Kalee.

PHOTOPHONE EQUIPMENTS, LTD., 10 Old Court House Street, Calcutta 1. Products Sold: RCA Theatre and Sound Equipment, National Theatre Supply Line, Strong Lamps and Rectifiers, International Seats.

WESTERN ELECTRIC CO. OF INDIA, Lighthouse Cinema Bldg., Calcutta. Products Sold: Westrex Corp. line.

EVERGREEN PICTURES CORP., Chandni Chowk, Delhi. Products Sold: National Theatre Supply Line.

PHOTOPHONE EQUIPMENTS, LTD., 72 Queensway, Delhi. Products Sold: RCA Theatre and Sound Equipment, National Theatre Supply Line, Strong Lamps and Rectifiers, International Seats.

WESTERN ELECTRIC CO. OF INDIA, 3/A Court Lane, Delhi. Products Sold: Westrex Corp. line.

EVERGREEN PICTURES CORP., 1 South Tukoganj, Indore. Products Sold: National Theatre Supply Line.

THE CINE AGENCY (INDIA) LTD., Subhadrabai Mansions, Woods Road, Mount Road P.O., Madras. Products Sold: Philips Equipment and Accessories.

EVERGREEN (BANGALORE) LTD., Subhadrabai Mansions, 53 General Patters Road, Madras 2. Products Sold: National Theatre Supply Line.

GAUMONT-KALEE, LTD., Khalil Mansions, 35 Mount Road, Madras. Products Sold: Gaumont-Kalee.

PHOTOPHONE EQUIPMENTS, LTD., 1/18 Mount Road, Madras. Products Sold: RCA Theatre and Sound Equipment, National Theatre Supply Line, Strong Lamps and Rectifiers, International Seats.

WESTERN ELECTRIC CO. OF INDIA, 9 Monteith Lane, Egmore, Madras. Products Sold: Westrex Corp. line.

INDO-CHINA

SOCIETE DES CINE-THEATRES D'INDO-CHINE, 11 a 21 Rue Catinat, Saigon, Cochinchine. Products Sold: RCA Theatre and Sound Equipment.

IRAN

IRAN GENERAL DISTRIBUTORS CORP., LTD., Avenue Bargh, Teheran. Products Sold: Gaumont-Kalee.

IRAN INDUSTRIAL & COMMERCIAL CO., LTD., 233 Sevom Esfand, Teheran. Products Sold: RCA Theatre and Sound Equipment.

IRAQ

NAIM AIZER & CO., King Ghazi Cinema Building, Baghdad. Products Sold: National Theatre Supply Line. COUNTRY SERVED—Iraq.

HAFIDH AL-KADI, Al-Rashad St., Baghdad. Products Sold: RCA Theatre and Sound Equipment.

BRITISH GENERAL SUPPLY STORES, 258 Mustansir St., Baghdad. Products Sold: Gaumont-Kalee.

IRELAND

G. B. KALEE, LTD., 43 Donegall St., Belfast. Products Sold: Gaumont-Kalee.

IRELAND (EIRE)

CENTURY MACHINERY STORES, LTD., 70 Middle Abbey St., Dublin. PERSONNEL—*Manager:* Maurice Baum. Products Sold: National Theatre Supply Line.

G. B. KALEE, LTD., 30 Lower Abbey St., Dublin. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., LTD., 7-8 Lower Abbey St., Dublin. PERSONNEL—*Commercial Manager:* Stewart Glass. Products Sold: Westrex Corp. line.

ISRAEL

J. L. & B. HAISSMAN BROS., P. O. B. 1315, Haifa. Products Sold: Philips Projection Machines and Theatre Appliances.

J. L. & B. HAISSMAN BROS., P. O. B. 945, Jerusalem. Products Sold: Philips Projection Machines and Theatre Appliances.

AMPA, LTD., P. O. Box 636, Tel-Aviv. PERSONNEL—*Theatre Department Manager:* M. Kolari. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—Israel and Trans-Jordan.

CARASSO BROTHERS, P. O. Box 364, Tel-Aviv. Products Sold: RCA Theatre and Sound Equipment.

J. GREEN & CO. (PALESTINE) LTD., 6 Beth Hashoeva Lane, Tel-Aviv. Products Sold: Gaumont-Kalee.

J. L. & B. HAISSMAN BROS., P. O. B. 289, Tel-Aviv. Products Sold: Philips Projection Machines and Theatre Appliances.

NEAR EAST THEATRE SUPPLY CO., P. O. B., 1253, Tel-Aviv. Products Sold: Westrex Corp. line.

ITALY

ISTITUTO OTTICO GIANNI VIGANO, Piazza Sta. Marie Beltrade 1, Milan. Products Sold: National Theatre Supply Line.

CINE-ONDA, Via Aurora 43, Rome. Products Sold: RCA Theatre and Sound Equipment.

ITALA ACUSTICA S.A., Via XX Settembre 5, Rome. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. OF ITALY, Piazza Lovatelli 1, Rome. Products Sold: Westrex Corp. line.

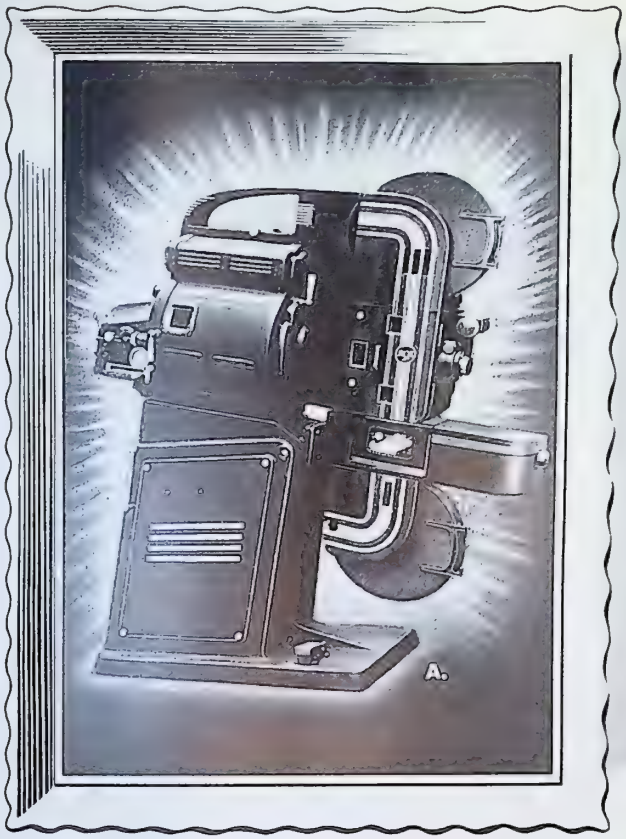
JAMAICA

JAMAICA THEATRES, LTD., P.O. Box 211, Kingston. Products Sold: RCA Theatre and Sound Equipment.

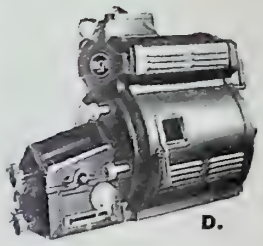
PALACE AMUSEMENT CO. (1921) LTD., P.O. Box 211, Kingston. Products Sold: Gaumont-Kalee.

JAPAN

ACME TRADING CO., INC., 4 Sanchoma Kyabasi, Chuo Eu, Tokyo. Products Sold: National Theatre Supply Line.











✓ RCA Standard Sound Systems for theatres seating up to 2400, available immediately for shipment by RCA Photophone Ltd., 43 Berkley Square, London W.1, England. See your RCA Theatre Supply Distributor.

Keep your Theatre Modern

with RCA THEATRE EQUIPMENT

A. RCA BX-80 PROJECTOR
for brighter, clearer, rock-steady pictures. By all standards of superior projection, mechanical design and operating efficiency, the RCA "BX-80" rates first with projectionists and managers of modern theatres throughout the world. Note these outstanding features . . . 20 per cent more light and clearer definition than any single shutter—due to double rear shutter...complete automatic lubrication . . . reduction of shutter flicker . . . unit-type construction. The complete line includes de luxe and standard models.

B. RCA THEATRE SOUND SYSTEMS ✓
please every patron. From soundhead —to amplifier—to stage loudspeaker, RCA Theatre Sound Systems are the standard of the world. Voices, music and sound effects are reproduced with such realistic "stage presence" that cinema-goers receive the emotional impression that the artists on the screen are performing to each patron alone.

C. CENTURY-ROTH MOTOR GENERATORS
for full-power, steady, direct current for arc lamp power supply. These compact units cut light flicker to the vanishing point. Available in standard ratings.

D. RCA ENARC LAMPS
for projection at its best. They produce snow-white light of extraordinary clarity and brilliance that brings out the striking photographic values of Technicolor and black-and-white pictures.

E. INTERNATIONAL CHAIRS
exceed every requirement of strength, durability, comfort, and correct posture pitch. Unit-assembly construction feature allows free interchanging of cushions. Hingeless seat suspension. Wide choice of new upholstery materials.

RCA 16mm SOUND FILM PROJECTORS
The ideal 16mm projector for small theatres, schools, churches, government departments, commercial and industrial organizations. Compact, lightweight, two-case equipment unexcelled in sound and picture projection.

See your RCA Theatre Supply Distributor, or write us direct, for details on RCA's complete line of theatre equipment and accessories.

On your next visit to the U. S. A. see the RCA Exhibition Hall in Radio City, New York, N. Y.

RCA INTERNATIONAL DIVISION
RADIO CORPORATION of AMERICA
745 FIFTH AVE., NEW YORK, N.Y., U.S.A.

JAVA

H. A. O'CONNOR & CO., LTD., c/o Electro Import N.V., 27 Mentang, Batavia. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. OF ASIA, Tanah Abang West 2, Batavia-Centrum, Indonesia. Products Sold: Westrex Corp. line.

LEBANON

WILLIAM MALLUK, Avenue Allenby, Beyrouth. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—Syria, Lebanon.

NICHOLAS J. PRELORENZO, Rue Boutros Karamé, Immeuble Sokolovitch, P. O. Box 341, Beyrouth. Products Sold: Westrex Corp. line.

TUFFY TRADING CO., S.A., Rue Saad Zaghoul, Beyrouth. PERSONNEL—*President:* K. G. Tutenkdjian. Products Sold: RCA Theatre and Sound Equipment.

N. ZABBAT, Post Box 741, Beyrouth. Products Sold: Gaumont-Kalee.

LIBERIA

OEST AFRICAANSCHE COMPAGNIE, Monrovia. Products Sold: RCA Theatre and Sound Equipment.

MALAYAN UNION

SHAW BROTHERS, LTD., Malayan Theatres, Ltd., 116 Robinson Rd., Singapore. Products Sold: National Theatre Supply Line, RCA Theatre and Sound Equipment.

MALAYA SIAM THEATRE ENTERPRISE, 235 Orchard Road, Singapore. Products Sold: RCA Theatre and Sound Equipment.

H. A. O'CONNOR & CO. LTD. 8/12 Laidlaw Building, Battery Road, Singapore. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. OF ASIA, 46 Orchard Road, Singapore. PERSONNEL—*Branch Manager:* H. E. McFarland. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Malay Union, Netherland East Indies, Siam.

MALTA

GENERAL SALES COMPANY, 26 Tower Road, Sliema. Products Sold: National Theatre Supply Line, RCA Theatre and Sound Equipment, Gaumont-Kalee.

MARTINIQUE

RENE DIDIER, Fort de France. Products Sold: National Theatre Supply Line.

MAURITIUS

THE MAURITIUS ANGLO-CHINESE CO., LTD., 40 Bis Sir William Newton St., Port Louis. Products Sold: Gaumont-Kalee.

MEXICO

DEKSA S.A., Paseo de la Reforma 152, Mexico, D.F. Products Sold: Gaumont-Kalee.

EQUIPO PARA CINES, S.A. Artes, 13-A, Mexico, D.F. PERSONNEL—*President:* Manuel Ampudia. Products Sold: National Theatre Supply Line.

EQUIPOS RADIO CINEMATOGRAFICAS, S.A., Mississippi No. 59 (Colonia Cuauhtemoc), Mexico, D.F. PERSONNEL—*President and Manager:* Manuel Angel Fernandez.

F. MIER Y HNO., S.A., Ave. Morelos No. 37, Mexico, D.F. PERSONNEL—*Owner and Manager:* Felipe Mier. Products Sold: RCA Theatre and Sound Equipment and Miscellaneous. AREA SERVED—Mexico, D.F.; Havana, Cuba; Caracas, Venezuela; Lima, Peru.

RCA VICTOR MEXICANA, S.A., Calzada Mariano Escobedo 2519, Mexico, D.F. PERSONNEL—*Manager:* Paul Hessinger. Products Sold: Theatre and Sound Equipment. COUNTRY SERVED—Entire Republic of Mexico.

WESTERN ELECTRIC CO. OF MEXICO, Avenida Morelos 64, Mexico, D.F. PERSONNEL—*General Manager:* Marcol G. Person. Products Sold: Westrex Corp. line.

JULIO G. GARCIA, Av. Colon 125, Quadalajara, Jalisco.

*ALUMBRADO Y NOVADADES, S.A., 5 de Mayo Oriente 536, Monterrey, Nuevo Leon.

MOROCCO

ELIAS BENDRIHEM, 33 Calle Italia, Tanger, Morocco. Products Sold: RCA Theatre and Sound Equipment.

NETHERLANDS

BICKER & VON der ROER, Sarphat Kade, 4, Amsterdam. Products Sold: National Theatre Supply Line.

N. V. KINOTECHNIEK, 530 Prinsengracht, Amsterdam C. Products Sold: Gaumont-Kalee.

NEDERLANDSCHE WESTERN ELECTRIC, N.V., Singel 170, Amsterdam. PERSONNEL—*Branch Manager:* J. G. van Erk. Products Sold: Westrex Corp. line.

*FIRMA ERVEN & CO., Heuvel A26, Oirschot. Products Sold: Theatre Chairs.

LOUIS B. KAGANAAR, Jekerstraat 82, Utrecht. Products Sold: Sound Equipment, Screens, Carbons, Accessories.

NICARAGUA

AUTOMOTIVE & INDUSTRIAL EQUIPMENT CO., Apartado 323, Managua. PERSONNEL—R. Sengelmann. Products Sold: National Theatre Supply Line. COUNTRY SERVED—Nicaragua.

H. M. BECKLIN CO., LTD., Gran Hotel, Managua. Products Sold: Westrex Corp. line.

SUCESORES DE RAFAEL CABRERA, Apartado 112, Managua. Products Sold: RCA Theatre and Sound Equipment.

NEW ZEALAND

P. C. BLENKARNE, LTD., Chancery Bldg., 16 O'Connell St., Auckland. PERSONNEL—*Owner:* P. C. Blenkarne. *Manager:* J. C. Spooner. Products Sold: National Theatre Supply Line. COUNTRY SERVED—New Zealand.

GAUMONT-KALEE (N. Z.) LTD., c/o Kerridge-Odeon, St. James Building, Queen St., Auckland, C. I. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO. (N. Z.), LTD., Queen St., Auckland. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (N. Z.), LTD., Colombo St., Christchurch. Products Sold: Westrex Corp. line.

P. C. BLENKARNE, LTD., 8 Victoria St., P. O. Box 1175, Christchurch. Products Sold: National Theatre Supply Line.

WESTERN ELECTRIC CO. (N. Z.), LTD., Empire Theatre, Dunedin. Products Sold: Westrex Corp. line.

WESTERN ELECTRIC CO. (N. Z.), LTD., Regent St., Hamilton. Products Sold: Westrex Corp. line.

GAUMONT-KALEE (N. Z.), LTD., P. O. Box 293, Wanganui. Products Sold: Gaumont-Kalee.

P. C. BLENKARNE, LTD., Magnus Bldg., Wakefield St., Wellington. Products Sold: National Theatre Supply Line.

WESTERN ELECTRIC CO. (N. Z.), LTD., Dental and Medical Supply Bldg., 128 Wakefield St., Wellington. Products Sold: Westrex Corp. line.

NORWAY

AKSJESELSKAPET PROTON, Rosenkrantzgt 11, Oslo. Products Sold: RCA Sound Equipment.

HANS H. KNUTSEN & CO., Kongens Gt. 15, Oslo. Products Sold: Gaumont-Kalee.

J. L. NERLIEN A/S, 13 Nedre Slottsgate, Oslo. Products Sold: National Theatre Supply Line.

THE SWEDISH WESTERN ELECTRIC CO., A.B., Gustav A. Ring, Akersgata 8, Oslo. Products Sold: Westrex Corp. line.

THE SWEDISH WESTERN ELECTRIC CO., A.B., Klostergaden 45, Trondheim. Products Sold: Westrex Corp. line.

PANAMA

PANAMA RADIO CORP., P. O. Box 406, Panama City. PERSONNEL—A. Bletterman. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment.

WESTERN ELECTRIC CO. (CARIBBEAN), Calle 31, No. 28, Panama City. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Panama and Canal Zone.

PAKISTAN

EMPIRE TALKIE DISTRIBUTORS, P. O. Box 644, Karachi. Products Sold: National Theatre Supply Line.

GAUMONT-KALEE, LTD., c/o Forbes, Forbes, Campbell & Co., Ltd., Corner of Bunder and Dunolly Roads, P. O. Box 10, Karachi. Products Sold: Gaumont-Kalee.

PHOTOPHONE EQUIPMENTS, LTD., Gulshan-E-Nasrat, Victoria Road, Karachi. Products Sold: RCA Theatre and Sound Equipment, National Theatre Supply Line, Strong Lamps and Rectifiers, International Seats.

WESTERN ELECTRIC CO. OF INDIA, Fikree Mansions No. 1, Room 18, Hassa Singhadvani St., Karachi. Products Sold: Westrex Corp line.

GAUMONT-KALEE, LTD., c/o British Distributors (India), Ltd., 10 Dayal Singh Mansions, The Mall, Lahore. Products Sold: Gaumont-Kalee.

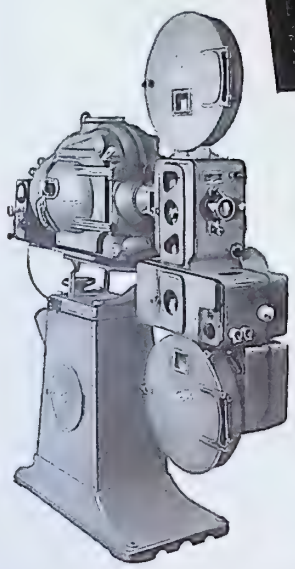
WESTERN ELECTRIC CO. OF INDIA, 48 Lawrence Road, Lahore. Products Sold: Westrex Corp. line.

PERU

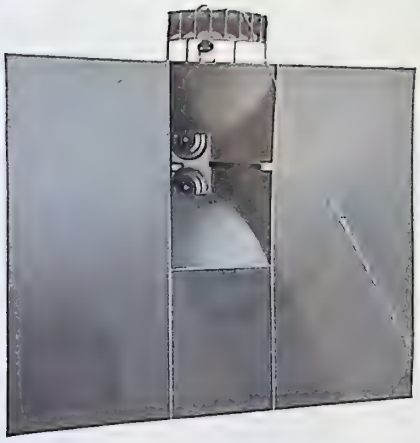
STANDARD ELECTRIC, S.A., Casilla 1281, Lima. PERSONNEL—*Manager:* J. Calero Paz. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment. COUNTRY SERVED—Peru.

* Listing not confirmed by Supply Dealer

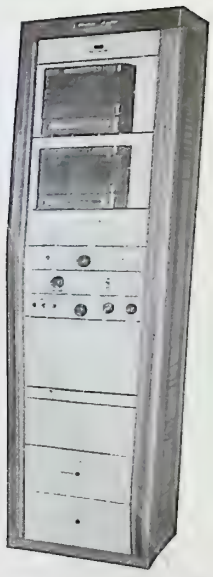
FOR FOREIGN EXHIBITORS



Westrex Master, Advanced and Standard Sound Systems meet every theatre requirement for highest quality sound.



Western Electric backstage loudspeaker equipment provides for total coverage of your theatre and achieves the illusion of screen "presence."



Westrex Amplifier Systems are designed to provide "custom-built" installations in whatever combination of amplifiers, receivers, control and signal panels you need.

Westrex Sound Systems for theatres of every size

Meeting the needs of motion picture exhibitors around the world* is the job of Westrex Corporation and its subsidiaries, which maintain branch offices and service points in more than 100 key cities.

In addition to the famous Westrex Sound Systems, Westrex Corporation distributes a complete line of projectors, arc lamps, and other equipment and supplies required for theatre operation.

The Westrex Sound System line for 1949 is led by the deluxe Master Model—the finest you can buy. For highest quality in the medium price range, there's the Westrex Advanced. And for fine sound at lowest possible cost, there's the Westrex Standard for smaller theatres.

The sound heads in all of these systems feature the Western Electric flutter suppressor which won an Academy Award in 1948 for technical achievement. The Westrex Amplifiers—from 15 to 100 watts output—are outstanding in performance, in convenience for service and in appearance. And the Western Electric backstage loudspeaker systems assure superlative reproduction of sound.

Expert inspection and maintenance service covering all makes of sound and projection equipment is also provided by Westrex. For full information, consult your nearest Westrex office which bears the famous name "Western Electric" or write to the address below.

*Except in U. S. A., Canada and Newfoundland

Westrex Corporation

111 EIGHTH AVENUE, NEW YORK 11, N. Y.

FORMERLY

Western Electric Export Corporation

WESTERN ELECTRIC CO. (ANDEAN), Edificio Hidalgo No. 150 y 154, Plaza San Martin, Lima. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Peru, Bolivia and Ecuador.

PHILIPPINE ISLANDS

S. M. BERGER AND CO., INC., 940 Raon St., Manila. Products Sold: National Theatre Supply Line.

PHILIPPINE ENGINEERING CORPORATION, 936 Raon St., Quiapo, Manila. Products Sold: RCA Theatre and Sound Equipment.

WESTERN ELECTRIC CO. OF ASIA, 675 Florentino Torres, Manila PERSONNEL—*Branch Manager:* R. R. Arbarbanell. Products Sold: Westrex Corp. line.

PORTUGAL

J. C. ALVAREZ LTD., 205 Rua Augusta, Lisbon. Products Sold: Gaumont-Kalee.

INSTITUTO PASTEUR de LISBOA, R. Nova do Almada 69, Lisbon. Products Sold: RCA Theatre and Sound Equipment.

MORA MESTRE & CIA., LTDA., 17, 30 Avenida Antonio Augusto de Aguiar, Lisbon. Products Sold: National Theatre Supply Line.

PUERTO RICO

PUERTO RICO IRON WORKS, INC., Real St., Ponce. Products Sold: RCA Theatre and Sound Equipment.

EDUARDO G. GONZALEZ, P. O. Box 3871, San Juan. PERSONNEL—*Owner and Manager:* Eduardo G. Gonzalez. *Products* Sold: National Theatre Supply *Line.* AREA SERVED—Puerto Rico.

*MUXO & SALGADO, *Recinto* Sur St. No. 323, P. O. Box 4806, *San* Juan. Telephone: 2-5271. PERSONNEL—*Partners:* H. R. Muxo, Jose G. Salgado. Products Sold: De *Dry* and Miscellaneous.

WESTERN ELECTRIC CO. (CARIBBEAN), P. O. *Box* 3242, Santurce 29. PERSONNEL—*Branch Manager:* W. H. Meisel. Products Sold: Westrex Corp. line. AREA SERVED—*Puerto* Rico, Dominican Republic, Virgin *Islands.*

SALVADOR

CARLOS AVILA, Calle Delgado y 6a, Avenida *Norte*, San Salvador. Products Sold: RCA *Theatre* and Sound Equipment.

J. SUVILLAGA Y CIA., Apartado No. 19, *San* Salvador. Products Sold: National Theatre Supply Line.

SCOTLAND

J. FRANK BROCKLISS, LTD., 181 Howard St., Glasgow. Products Sold: National Theatre Supply Line.

G. B. KALEE LTD., 211 Hope St., Glasgow. Products Sold: Gaumont-Kalee.

WESTERN ELECTRIC CO., LTD., 141 Bath St., Glasgow C. 1. Products Sold: Westrex Corp. line.

SOCIETY ISLANDS

ESTABLISSEMENTS BALDWIN, Boite Postal 119, Papeete, Tahiti. Products Sold: RCA Theatre and Sound Equipment.

* Listing not confirmed by Supply Dealer

SPAIN

C. & G. CARANDINI S.A., *Apartado* 487, Ronda Universidad 31, *Barcelona.* Products Sold: Gaumont-Kalee.

C. & G. CARANDINI *S.A.*, Avenida Jose Antonio 31, Madrid. *Products* Sold: Gaumont-Kalee.

REY SORIA Y *CIA.*, S.A., Calle Mayor 6, Madrid. Products *Sold:* RCA Theatre and Sound Equipment.

S. I. C. E., *Zurrand* 14, Madrid. PERSONNEL—Maxemo Hessel. Products Sold: National Theatre *Supply* Line.

WESTERN *ELECTRIC* CO. OF SPAIN, Plaza *Cataluna* 22, Barcelona. Products Sold: *Westrex* Corp. line. COUNTRIES SERVED—*Spain*, Portugal and Gibraltar.

SWEDEN

AKTIEBOLAGET FOTOAGENTUREN, *Mastersamuelsgatan* 23, Stockholm. Products *Sold:* Gaumont-Kalee.

FOTO AB SKANDIA, Kung gotan 24, *Stockholm.* PERSONNEL—Henry Holni. *Products* Sold: National Theatre Supply *Line.*

SVENSKA VIDEO AKTIEBOLAG, Norrlandsgatan 18, 3 tr., Stockholm. Products Sold: RCA Theatre and Sound Equipment.

THE SWEDISH WESTERN ELECTRIC CO., AKTIEBOLAG, Sveavagen 25-27, Stockholm. PERSONNEL—*Managing Director:* Stephen Wiedemann. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Sweden, Norway and Finland.

SWITZERLAND

ALPINE WESTERN ELECTRIC CO., 60 Viadukstrasse, Basle. Products Sold: Westrex Corp. line.

VICTOR FILMS LTD., Schutzenmattstrasse 43, Basle. Products Sold: Gaumont-Kalee.

JACQUES BAERLOCHER CORP. FOR ELECTRONIC PRODUCTS, Haus am Kreuzplatz, Forchstrasse 2, Zurich. Products Sold: RCA Theatre and Sound Equipment.

TASMANIA

WESTERN ELECTRIC CO. (AUSTRALIA), PTY., LTD., 38 Elizabeth St., Hobart. Products Sold: Westrex Corp. line.

THAILAND (SIAM)

BARROW, BROWN & CO. (1948) LTD., Barrow, Brown Bldg., Bangkok. Products Sold: RCA Theatre and Sound Equipment.

SEMCO CO., LTD., 1244-46 New Road, Bangkok. Products Sold: Westrex Corp. line.

SHAW BROS., LTD., Capitol Cinema Bldg., New Road, Bangkok. Products Sold: National Theatre Supply Line.

TRINIDAD

GENERAL SUPPLIES, LTD., 19 and 28 Henry Street, Port of Spain. PERSONNEL—*Manager:* Isaac N. Akow. Products Sold: RCA Theatre and Sound Equipment. COUNTRIES SERVED—Trinidad, all of British West Indies, including British Guiana.

GLOBE THEATRES, LTD., Port of Spain. Products Sold: National Theatre Supply Line.

MASONS LTD., 2 and 4 St. Vincent St., Port of Spain. Products Sold: Gaumont-Kalee. COUNTRIES SERVED—West Indies, British Guiana, excluding Jamaica.

NATIONAL UNION RADIO SERVICE, 9 Corniles St., Port of Spain. PERSONNEL—*Owner and Manager:* J. H. Fung. Products Sold: National Theatre Supply Line. COUNTRIES SERVED—Trinidad, British Guiana, Venezuela.

WESTERN ELECTRIC CO. (CARIBBEAN), 9-11 Edward St., P. O. Box 161, Port of Spain. PERSONNEL—*Branch Manager:* B. W. Budtz. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Trinidad; Barbados; British, Dutch and French Guianas; Leeward and Windward Islands.

TURKEY

TEKNIKA, S.A.T., P. O. Box 1153, Istanbul. Products Sold: RCA Theatre and Sound Equipment.

TURK MOTOR ANONIM SIRKETI, Beyoglu Istiklal Cadesi, Istanbul. PERSONNEL—N. Verdi. Products Sold: National Theatre Supply Line.

UNION OF SOUTH AFRICA

AFRICAN CONSOLIDATED FILMS, LTD., 108-114 Buitengracht St., Cape Town. Products Sold: Gaumont-Kalee.

AFRICAN CONSOLIDATED FILMS, LTD., Broadcast House, 170 Commissioner St., Box 1574, Johannesburg. PERSONNEL— T. Watson. Products Sold: National Theatre Supply Line, RCA Theatre and Sound Equipment, Gaumont-Kalee.

WESTERN ELECTRIC CO. (NEAR EAST), 96 Main St., Johannesburg. Products Sold: Westrex Corp. line. COUNTRIES SERVED—Union of South Africa, Northern and Southern Rhodesia, Belgian Congo, Portuguese East and West Africa, Tanganyika, Uganda, Kenya Colony, Zanzibar, Angola.

URUGUAY

HAROLDO GARCIA AROCENA, San Jose 1202 Esq. Cuareim, Montevideo. Products Sold: Gaumont-Kalee.

CINEMATOGRAFICA GLUCKSMANN, S.A., Rio Branco 1320-26, Montevideo. PERSONNEL—*Owner and Manager:* Bernardo Glucksmann. Products Sold: National Theatre Supply Line and RCA Theatre and Sound Equipment. COUNTRY SERVED—Uruguay.

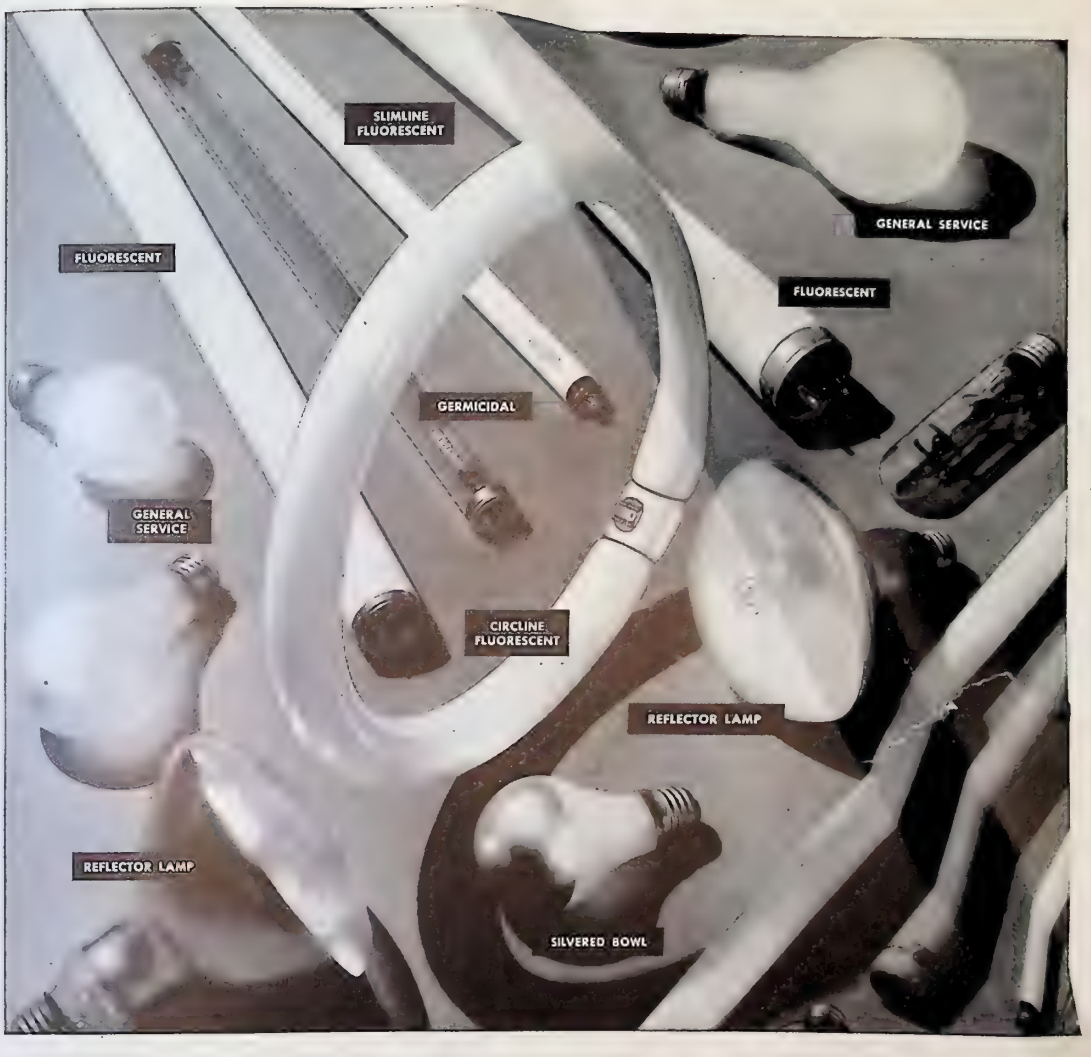
VENEZUELA

LUIS MARTINEZ C.A., Miracielos A. Hospital 87, Caracas. Products Sold: Gaumont-Kalee.

NATIONAL SUPPLY, S.A., Gorda a Asserradero 32/34, Caracas. PERSONNEL—*Manager:* Augusto M. Matilla. Products Sold: National Theatre Supply Line.

STANDARD ELECTRIC, S.A., Bloque 6, Local 6, El Silencio, Caracas. Products Sold: RCA Theatre and Sound Equipment. COUNTRY SERVED—Venezuela.

WESTERN ELECTRIC CO. (CARIBBEAN), Cipresas a Miracielos No. 1-1, Caracas. PERSONNEL—*Branch Manager:* Dennis L. Smith. Products Sold: Westrex Corp. line.



Select the lighting you need!

Be sure the lamps are marked

Whether you plan to build or remodel your theatre, you will find that there is a G-E lamp for every modern lighting need. For fluorescent light there are the general line, slimline and circline lamps . . . among the newer incandescent lamps are G-E reflector, projector and silvered bowl. Add to these, many other G-E lamps in 10,000 sizes and shapes!

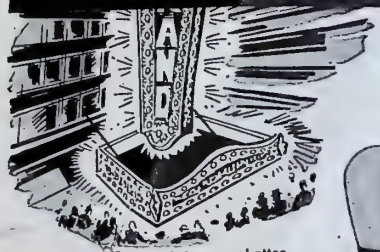
G-E LAMPS

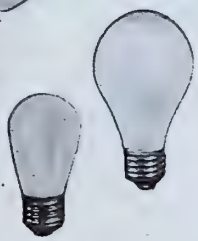
GENERAL ELECTRIC

EVERY THEATRE NEEDS

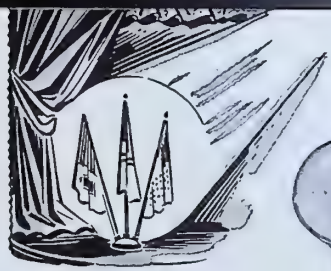
Westinghouse

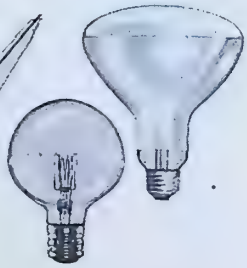
LAMPS FOR SEE-ABILITY



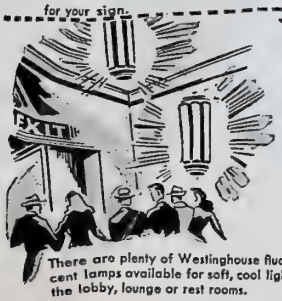


Make your marquee and sign a real attention-getter. Use the standard 10w S 14 inside-frosted for the marquee and the 40w A 21 in clear, red, blue and green for your sign.



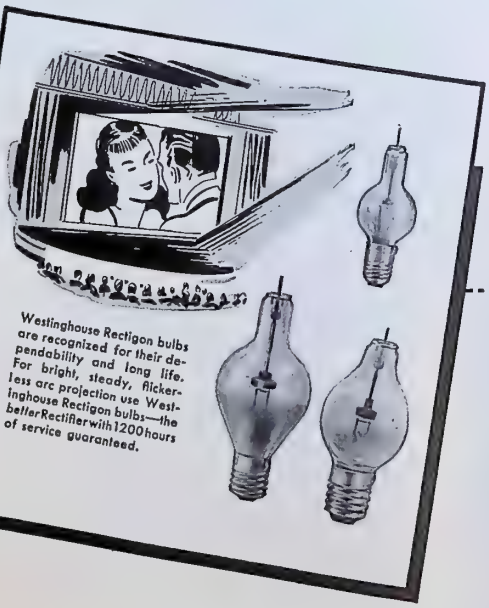


Dress up your stage with attractive settings, spotlighted with the Westinghouse 1000w G 40 or 300w R 40.

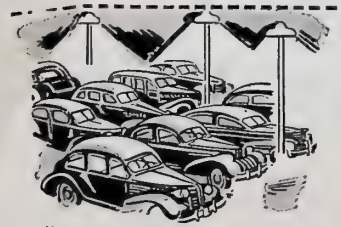


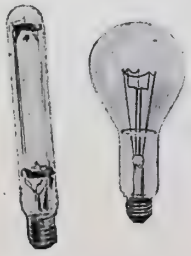


There are plenty of Westinghouse fluorescent lamps available for soft, cool light in the lobby, lounge or rest rooms.



Westinghouse Rectigon bulbs are recognized for their dependability and long life. For bright, steady, flickerless arc projection use Westinghouse Rectigon bulbs—the better Rectifier with 1200 hours of service guaranteed.





Have your customers park their cars in comfort. Flood light the parking area with tubular Mercury Vapor or 1000w PS 52 incandescent lamps.

Westinghouse

LAMPS FOR SEE-ABILITY

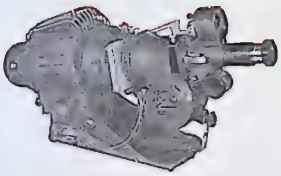
For further information about these and all other types of Westinghouse bulbs consult your nearest Westinghouse Distributor.

Utilize These Modern Aids

for Smarter Appearance and Convenience in LOBBY

GoldE

for Greater Efficiency and Economy in BOOTH and BOX OFFICE



ALL-PURPOSE PROJECTOR

With this 1000 Watt Double Blower Cooled Projector, you can now project from your booth everything from 3¼ x 4 down to 2 x 2 (35mm.) slides *plus* filmstrip. *Coolest* of its type. Total high power illumination is directed through the smallest transparencies. *Bulletin No. 473 gives full details.*
Also AIR-FLO STEREOPTON for 1000 watt projection of 3¼ x 4 only. *Send for Bulletin No. 453.*



MODEL "DH"
Automatic Enclosed REWIND

Many exclusive features. Super-silent. Super-safe. Extra-strong. U. L. approved—eliminates fire hazard. Micro-Switch safety cut-off—when door *opens,* motor stops! Positive friction—will not clinch film. Tilt-back case—*reels can't fly off!* Modern, compact design. *Send for Bulletin No. 456.*

Other GoldE Products

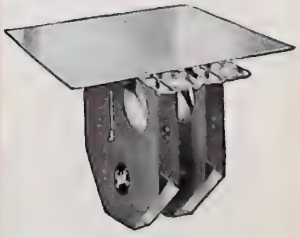
Carbon Waste Cans • Sand Urns
Rewind Tables • Take-ups
Music Stands

Available Through Leading Theatre Supply Dealers



TICKET BOX

Enhances the appearance of any theatre lobby. Sturdy steel construction. Cast aluminum top and bottom, finished in black baked enamel. Steel ticket hopper. Choice of Mandarin Red, Royal Blue, or Burnt Orange. (Special colors are available.) *Send for Bulletin No. 455.*



TICKET DISPENSER

Most economical unit on the market—for applications where low cost is important. Tickets readily grasped. Magazine loading ticket units—sturdily made, attractively finished. Additional magazines may be added. Rub-proof, satin chrome top plate. *Send for Bulletin No. 476.*



1000 WATT
BANTAM SUPER-SPOT

Smallest and coolest spot of its kind. Forced air-cooled by silent motor-driven twin blower. Throws a clear, powerful beam 4½ in. Fresnel lens. Easy push-pull beam control. Tilt device locks at any angle. Cast aluminum and welded stress-proof housing. Durable black baked wrinkle finish. Blinders, Color Frames, Snoot, and other attachments available. *Write for Bulletin No. 461.*



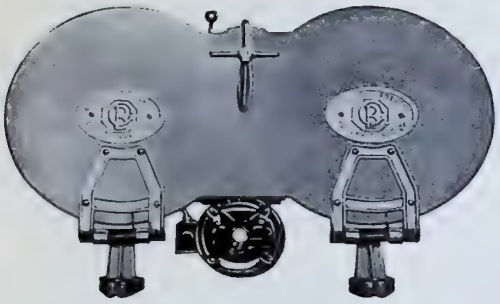
500 WATT
ROTOCHROME SPOTLIGHT

Liven your lobby and displays with a continuous flood of color variations. Here in one compact, safe, simple unit you have all the compelling attraction of light, color, and motion. Absolutely safe. Completely automatic. Six continuous color changes. Adjustable beam size. Positive tilt adjustment. Black baked wrinkle finish. Ceiling or wall mounting bracket available. *Send for Bulletin No. 471.*

GoldE Manufacturing Company 1220-T WEST MADISON ST., CHICAGO 7, ILLINOIS

Designers and Manufacturers of Theatre Equipment for Over 25 Years

GOLDBERG BROTHERS
METAL PRODUCTS



NEW AUTOMATIC FILM REWINDER

Passed by the board of Fire Underwriters, accommodates 15-inch reels and smaller . . . reels slip on spindles quickly and easily. The rewinder is equipped with an automatic stop.

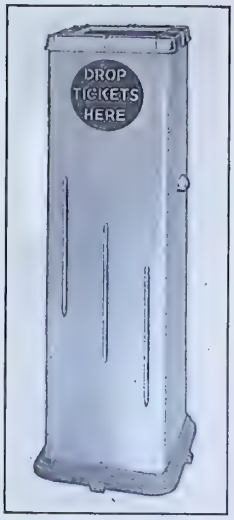
New Goldberg Rewinder is made of heavy metal, carefully machined . . . doors open on extra heavy counter-balanced spring hinges . . . a large handle keeps the door perfectly tight. A control handle for starting.

GOLDBERG TICKET BOX

Attractive looking, made of heavy high grade steel, baked enamel crackle finish and aluminum polished top. Made in two styles: G.T.B. has glass baffles and cast iron base. P.T.B. has no glass baffles nor cast iron base. Top has slot for depositing tickets. *Not in production.* Available as soon as the steel shortage eases up.

Made in following colors:

ALUMINUM RED
LIGHT BLUE

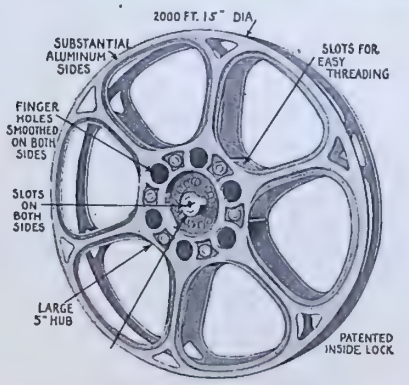




"NO DRAFT" SPEAKING TUBE

Prevents Drafts . . . Dependable
Good Looking . . . Economical

You do away with colds, sore throat and the necessity for leave of absence once you install this efficient speaking tube. It's clever, good-looking and will fit any opening from 2¼" to 4¼". Consists of two rust resisting metal plates, chromium plated, with washers and a screw . . . easy to install.



GOLDBERG CAST ALUMINUM REELS

(Patented)

are the reels in the biggest demand today by projectionists . . . beautiful in appearance, carefully machined, they are light, strong, and substantially made. The patented lock holds the reel solid . . . runs perfectly true . . . 2 slots provide easy threading. Each packed in individual cartons, 2,000 ft.

15" dia. 5" hub **14" dia. 4" hub**

Approximate weight 2½ pounds each.

In ordering specify size of hub required.

AUTOMATIC ELECTRIC REWINDERS • CAST ALUMINUM REELS • TICKET BOXES
SPEAKING TUBES • METAL SHIPPING CASES • METAL FILM EXCHANGE REELS
FILM CABINETS • 16 MM REELS and CANS • REWIND TABLES

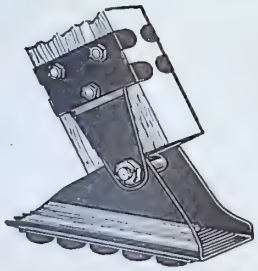
ORDER FROM YOUR THEATRE SUPPLY DEALER

GOLDBERG BROTHERS, 3500 Walnut Street, DENVER, COLO.

For Safety's Sake Use . . .

DAYTON SAFETY LADDERS AND SHOES

Rubber Tread In Position For Indoor Use.



Spiked Toe In Position For Outdoor Use.



"Listed by Underwriters' Laboratories, Inc."

DAYTON SAFETY LADDER SHOES fit any Standard ladder rails . . . easy to install

Install Dayton Safety Ladder Shoes on your present straight ladders—guarantee additional safety, prevent slipping.

Shoe instantly converted for either indoor or outdoor use.

Shoe or base is made of No. 16 gauge and the side plates are of No. 13 gauge steel. Suction grip treads are renewable. Lock nuts and spring washers insure proper adjustment.

Sizes 3 feet to 16 feet in height with standard rubber safety shoes at no extra cost.



DAYTON SAFETY LADDERS

Maintenance men everywhere rely on Dayton Safety Ladders for maximum safety and convenience. Daytons are constructed of tested airplane spruce and reinforced with rigid steel supports to give great strength and lightness of weight.

Handrails of steel guard the large roomy platform for added safety. Half of platform can be raised to form an extra step, when needed. These famous ladders can be set up instantly, are easy to carry and fold compactly for storing. Automatic locking feature insures safety while ladder is in use.

DAYTON "ROLL-ALONG" SAFETY LADDERS

. . . The Dayton Roll-Along Safety Ladder with its rubber tired swivel casters can be speedily moved in any direction with practically no effort. Safety shoes with renewable treads hold ladder permanently and safely in place while ladder is occupied.

Constructed of tested airplane spruce throughout and reinforced with steel braces for additional safety. Folds compactly for convenient storing. Available in sizes 3-ft., 4½-ft. and 6-ft.

Elevating auxiliary platform which folds back in main platform adds height if desired. These ladders are being used in many of America's largest plants. See for yourself! Write today for bulletin.

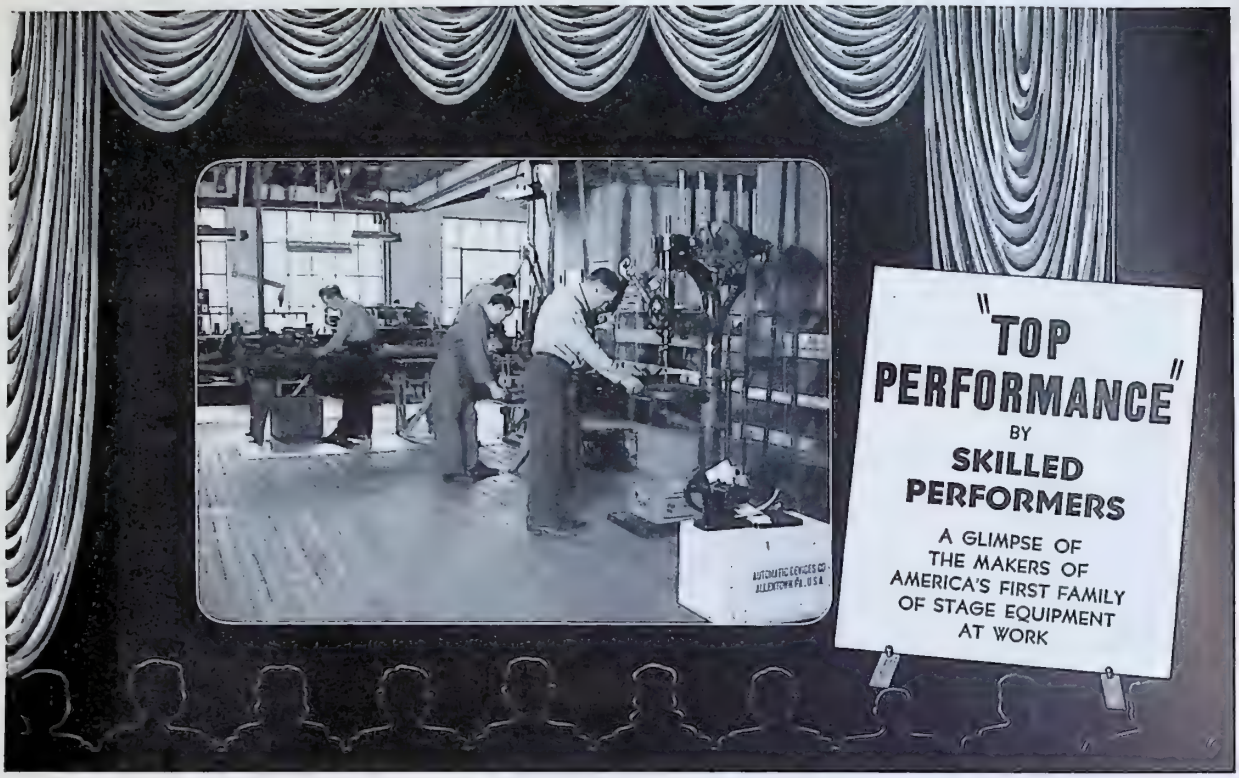


FOR SAFETY'S SAKE . . .
consult our SAFETY DEPARTMENT . . . we have the complete line of safety equipment for your every requirement.

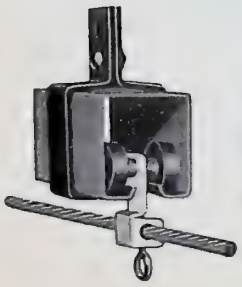
WRITE TODAY FOR COMPLETE INFORMATION

DAYTON SAFETY LADDER COMPANY

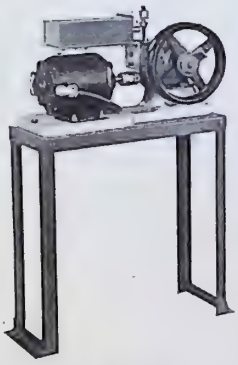
2337 GILBERT AVENUE • CINCINNATI 6, OHIO

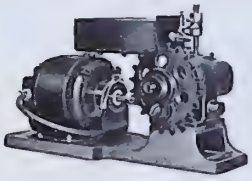


. . . Presenting You with the Finest in Stage Equipment


BESTEEL TRACK
(Medium Duty)


SILENT STEEL TRACK
(Heavy Duty)


AUTODRAPE Machine and STANDSTEEL


AUTODRAPE for sprocket and chain operation.

Also

TABULO CURTAINS
ORCHESTRA LIFTS AND CONSOLES
REVOLVING STAGES
DISAPPEARING STAGES

"SCENERY FOR THE THEATRE" (462 P.P.)

CONTOUR CURTAINS
STAGE HARDWARE

And the famous STABILARC motor generator sets.

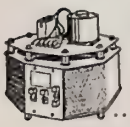
AUTOMATIC DEVICES COMPANY 1035 LINDEN STREET • ALLENTOWN, PA.

"IF IT'S EQUIPMENT YOU NEED, WE HAVE IT"

AMUSEMENT INDUSTRIES COMPANY

represents the newest idea in merchandising specialized products for all phases of the amusement industry.

These are some of the products immediately available:


. . . DIMMERS

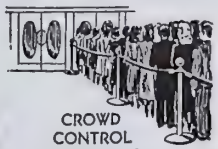
ELECTRIC TURNTABLES . . .


NICKEL CHANGEMAKERS . . .


ELECTRIC SHOE-SHINERS . . .


COIN CHANGERS . . .

HAND COUNTERS . . .



CROWD CONTROL EQUIPMENT . . .

For further details write:

AND MANY MORE!

AMUSEMENT INDUSTRIES COMPANY 1035 LINDEN STREET • ALLENTOWN, PA.

BOOK THREE:
Management

Advertising and Promotion

HOW ADVERTISING INTRODUCED A THEATRE 490
An Analysis of the Sound Psychological Background in the ODEON-TORONTO Campaign

"SELL" YOUR THEATRE, OR SELL YOUR THEATRE! *Montague Salmon* 494
Good Pictures Come and Go, But Alert Showmanship Provides the Equalizer in Institutional Exploitation

Recommended Practices and Maintenance

COSTS CONSISTENT WITH GOOD BUSINESS..*Jay Emanuel* 500
A Comparative Review of Theatre Finance Including Expenses, Profits and Valuations Based on Experience

CURRENTLY ALLOWED DEPRECIATION SCHEDULES.... 503
Treasury Department Attitude on High Salvage Values Requires Readjustment of Accounting by Most Theatres

SANITARY MAINTENANCE HAS BOXOFFICE IMPORTANCE 506
Recommended Cleaning and Disinfecting Practices That Will Guarantee Clean Theatre Washrooms

Extra Profits

THEATRE PROBLEMS IN CONFECTION VENDING..... 516
A Survey of Conditions as They Exist in 1949, and of the Possibilities for Development in the Future

AN INDEPENDENT CIRCUIT'S EXTRA PROFITS SET-UP.. 519
The Management Methods and Systems Which the Large Walter Reade Circuit Found Necessary to a Big Job

Television and 16mm. Film

LARGE SCREEN TELEVISION .....*Ralph V. Little, Jr.* 528
An Analysis of the Advantages and Disadvantages of the Existing Methods With Theatre Application

TELEVISION—OLD WINE IN A NEW BOTTLE ..*E. S. Huber* 532
A Practical Theatre Man Discusses the Probable Role of Television in Motion Picture Houses

EMERGENCY USE OF 16MM. AS STANDBY 534
Results of a Field Test of Sub-Standard Equipment Under Normal Theatre Operating Use Before Audiences

Advertising:

ALTEC SERVICE CORP. 510
AMPRO CORP., THE 535
BERLO VENDING CO. 503
CRETORS, C. AND COMPANY 524
I. A. T. S. E. 514
MANLEY, INC. 525
NATIONAL SCREEN SERVICE CORP. 498
NATIONAL THEATRE SUPPLY 526
RCA SERVICE CO., INC. 511
REVERSIBLE COLLAR CO. 512
WEST DISINFECTING CO. 503

ADVERTISING *and* PROMOTION

1948-49

How Advertising Introduced a Theatre

An Analysis of the Sound Psychological Background in the ODEON-TORONTO Campaign

Building a new theatre is an engineering and artistic triumph. Getting that same theatre known and accepted is a work of art in psychology, or advertising to call it by its usual name. Since the advertising campaign of the Odeon-Toronto has been fully documented, it is possible to describe here its day-by-day progress and to discuss its general themes. This campaign was characterized mainly by its dignity, restraint and its constant and undeviating good taste, none of which admirable qualities interfered in the least with its essential high potency.

In the newspaper advertising campaign created for the purpose of introducing the new two-million dollar Odeon-Toronto Theatre, largest and most elaborate post-war film house to be built in Canada, continual emphasis was placed on the quasi-slogan "Showplace of the Dominion" and the claim, quoted from experts, that the new theatre was "one of the five most distinguished cinemas in the world."

The campaign avoided any reference to the cost of the structure. With building costs zooming into the stratosphere and beyond, this previously valid approach was omitted because in 1948 it was meaningless. Rather, it was determined that dignity and not flamboyance would be the continual key-note running through the series of advertisements.

Setting the Theme

This meant some striking changes in policy. Like avoiding the traditional use of a front view photograph of the new theatre, surrounded by masses of reading matter—usually dragging out once more all the overworked adjectives of exaggeration—and making much use of black-and-white reverse type. Instead of the old routine, a new principle of moderation was adopted. Instead of black and white extremes, the use of ben-day was adhered to throughout the entire newspaper campaign. In fact, an attempt, and a successful one, was made to abstain as much as possible from the use of sheer black, with the reasoning that reader attention would be more effectively attracted by a maximum use of gray with white borders.

From the standpoint of psychology, it was recognized that the theatre-goer of today knows little of the manifold technicalities involved in theatre design and operation; but that he is extremely interested in such factors if these are explained in simple non-technical language. This includes not only the engineering details of heating and air-conditioning but also the problems of acoustics and optics, the difficulties of film projection, and the effect of color on the emotions. The Odeon-Toronto campaign, directed by men who realized the presence of this innate desire for information, made full use of the explanatory technique. This was the reason why the story of the new showplace and its various activities was told in the straight forward, non-technical prose; and why such hackneyed and overworked adjectives as "de luxe", "colossal", and "magnificent" were deliberately and enthusiastically discarded.

On the occasion of the opening of the Odeon-Toronto, the governing advertising theme—and point of sale—was the theatre itself rather than the opening film attraction. The number one tagline, used consistently throughout the latter part of the newspaper advertising campaign, was "Showplace of the Dominion" (already alluded to); and, in order to positively attract reader attention, all surrounding copy was kept to a minimum—with a message that could be read in 15 seconds.



OPENING SALVO OF THE CAMPAIGN was this often repeated cryptic brace of teaser bold letters.

Still stressing the architectural uniqueness and beauty of the building itself, all advertisements — after the teaser campaign preceding—featured a rendering of the nine-story tower which, with its ten-foot high blue letters and neon gold lighting, is now a distinguishing landmark on the midtown Toronto skyline. In addition to announcements of the new theatre's approaching opening and its architectural splendors within and without, the campaign manifestly stressed the actual location of the house in the city of Toronto. While the Yonge-Carlton intersection is well-known to Toronto residents, it was remembered that the circulation of the three Toronto daily newspapers covered a wide radius and that the theatre's potential clientele lay not only in the urban limits, but even more important, within all the fifty-mile surrounding area.

The Physical Execution

An analysis of the different advertisements in the same sequence in which they originally appeared will make clear how the series was ingeniously constructed to project the maximum interest, create the maximum suspense, and generate the maximum anticipation among the greatest number of potential patrons.

Advance Teasers

Two-and-a-half weeks before the theatre's scheduled opening, a bold "O-T" almost ¾ of an inch tall, simulating the design of the letters on the actual theatre sign, set in an island of white space one column wide and 1⅝ inches deep, was inserted in the three Toronto daily newspapers — Toronto Daily Star, Toronto Globe & Mail, and Toronto Telegram—for six consecutive days.

The juxtaposition and exploitation of the two letters "O-T" became the key-note of the teaser campaign. Because the Odeon-Toronto was scheduled to open on a Thursday night with "Oliver



THE "O-T" THEME DEVELOPS with variations of the same initials devoted to other saleable facts.



THIS FINAL TEASER AD rounded out the theme of the "O-T" series with a direct appeal to action.

Twist" as the feature presentation, the multiple adaptability of the two initials was early discerned in the preparation of the advertising layouts.

During the subsequent six days, the "O-T" theme was stressed more fully. In an augmented series, the bold "O" and "T" caps were followed by an overgrown asterisk which referred readers to three plays on the initials underneath a strongly delineated outline of the new theatre with the pertinent name "ODEON" set vertically on the side of the tower. The footnotes proclaimed "ODEON-TORONTO" (and in sotte voce smaller type "Twenty Carlton Street, Showplace of the Dominion"); "Opening Thursday" (and in reading glass type "September 9th at 8:30 P. M., North America Premiere of"); "Oliver Twist" (and finally in another two lines of miscroscopic type "J. Arthur Rank presents, Charles Dickens' masterpiece").

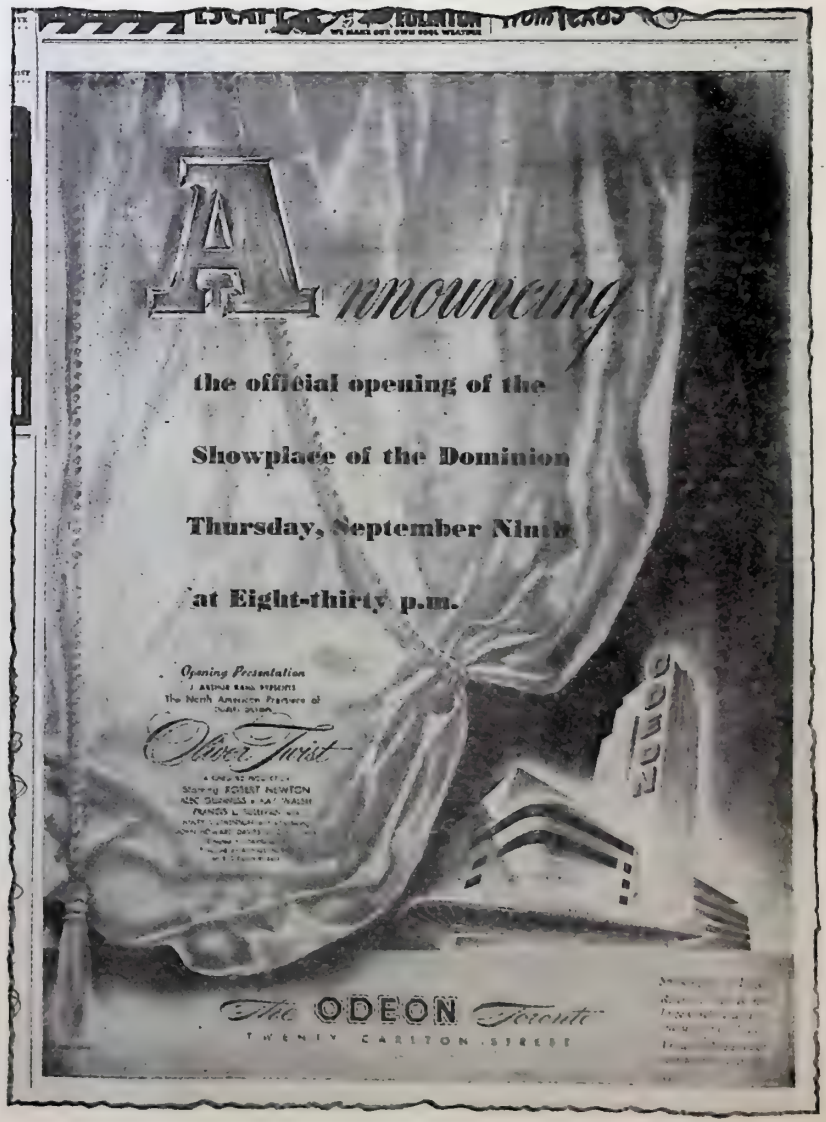
In the final insertion, the invitation to be "On Time" was added to the list of "O-T" data and made specific by the phrase "for the official opening ceremonies" placed in small type beneath the introductory "O-T" phrase. These advertisements of less than one column width were set in a space two columns wide and 5¾ inches deep in order to gain attention with white space on both flanks of the announcement.

Advance Publicity

The campaign acquired added momentum during the teaser days. Roly Young, popular amusement columnist of "The Globe and Mail" devoted at least two of his columns to a diverting account of the wonders of the new theatre. One column described the big pylon with its offices and its elevators, mentioned the stage and its dimensions, the orchestra pit, the mammoth pipe-organ, the lighting equipment and closed with this paragraph ideally designed to set the moving picture devotees of Toronto in a perfect ecstasy of anticipation: "All workmen being concentrated on getting the theatre ready to open by Sept. 9, this office part will be finished later in the year. According to present plans, opening attraction will be 'Oliver Twist'. Looking at the place now, one would expect Oliver Twist to be fully grown before they had the theatre ready to open, and I, for one, shall never cease to marvel if they make it any time in the month of September."

On another day, Mr. Young took his readers on a conducted tour via his column of the new Odeon's air conditoning system ("31 different and separate air-conditioning plants in the building") and showed them "the immense pool with some 150,000 gallons" (actually it is only 86,000 gallons) of Lake Ontario sloshing around in it to provide a cooling station for the air circulating through the theatre building. The Odeon-Toronto's Restaurant and convenient eating arrangements for theatre patrons receive special mention; and the extra-comfort-

FORMAL ANNOUNCEMENT of the debut provided a dramatic moment in the campaign, with a luxurious curtain opening to reveal the striking lines of the "Showplace of the Dominion," and added details.



able seating, the electronic color schemes are included. What gave these columns their unusual interest was the informality of the style and the intimacy of the message—truly an effective adjunct of the "O-T" advertisements.

Advance Display

Three days before the theatre's opening, the first big display advertisement appeared for one day in the three Toronto dailies. Measuring 5 columns wide by approximately 14 inches deep, the space was devoted to a definite and dignified announcement of the official openning. Here, the theme "Showplace of the Dominion" was given a dominant position rather than the specific name "Odeon-Toronto" although the latter was stated at least twice.

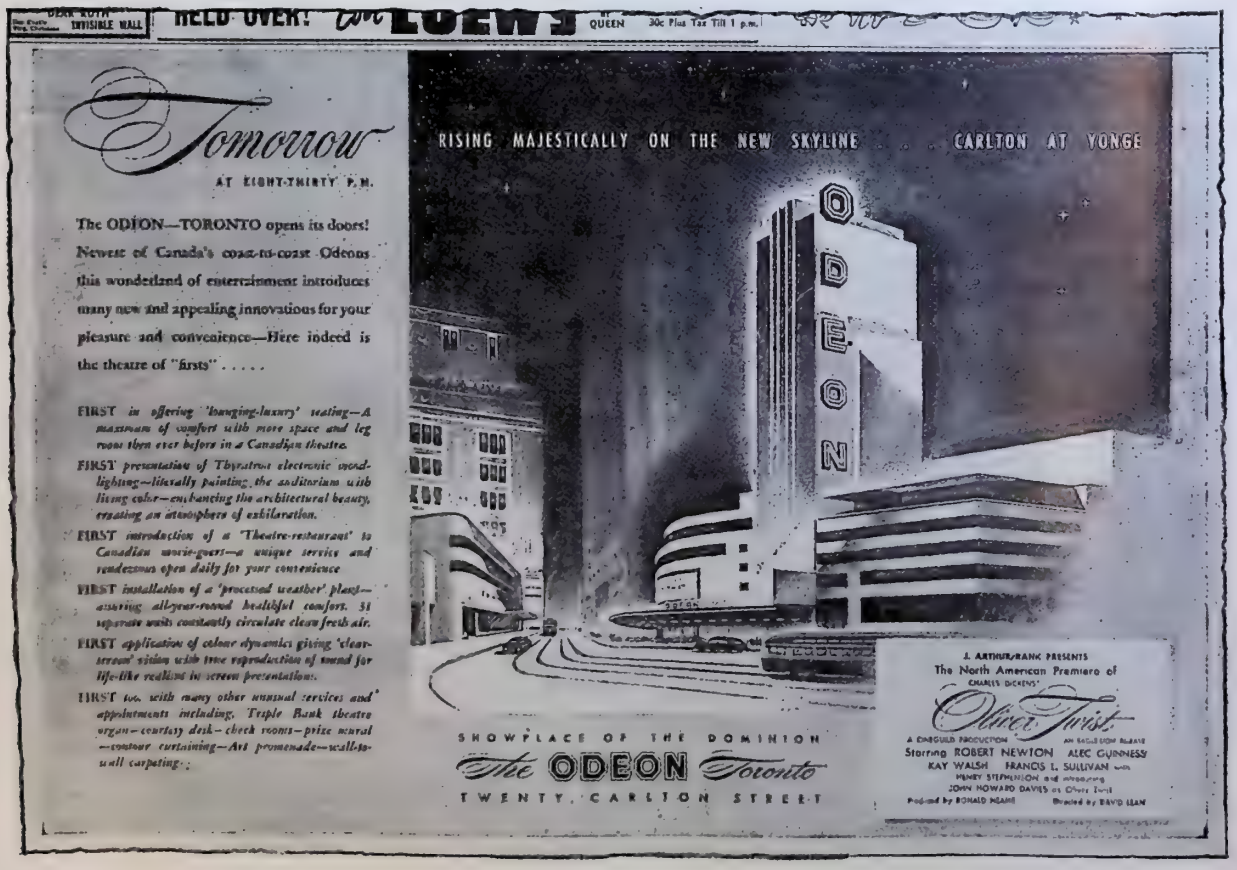
This striking advertisement depicted a luxurious curtain being rolled back to disclose a stylized rendering of the new structure (which had been similarly but more starkly represented in the earlier and smaller ads) and its claim to being a new cultural center on the Canadian scene. Again, advertising copy was kept to a minimum and featured only the opening date and the opening presentation. Dominating legend on the curtain was: "Announcing the official opening of the Showplace of the Dominion, Thursday, September Ninth, at Eight-thirty p. m." Notice that even the numbers have been spelled out for added dignity. On the lower part of the curtain information on the opening presentation is given, but this, with the exception of the title "Oliver Twist" in an aristocratic script, is printed in a much smaller typeface than the announcement.

In the lower right-hand corner of the advertisement and directly under the drawing of the new "Odeon" advance information about theatre facilities—probably considered by the management to be of primary importance—appeared. This included: "Smoking in all Loges"; "Reserved seats in the Loge Circle available one week in advance"; and "Theatre Restaurant open noon to midnight." At bottom center the signature of the theatre and its address—figure "twenty" written out, no abbreviation for "street" brought the advertisement to a close with a quiet dignified flourish.

Two days before the opening, another distinguished display advertisement measuring 8 columns wide by approximately 10½ inches deep and occupying a half-page in the three Toronto dailies, appeared before a possible 754,307 people of Toronto and suburbs (calculation based on latest available figure on the combined circulation of the three dailies).

This half-page display drew emphatic attention to the actual location of the new Odeon-Toronto. Dominating the skyline as usual, the new theatre was orientated in close proximity to Eaton's, (the largest department store in the British Empire); to the Kresge unit (largest in Canada) on the opposite corner; and to the Hydro-Electric Commission's skyscraper which adjoins the Odeon-Toronto Theatre. Once again the focal point of the illustration was the nine-story tower of the new theatre with its ten-foot letters spelling out "ODEON" in vertical style and its breath-taking luminosity bursting out as vividly as a Fourth of July night fireworks display. And in this advertisement reality came several steps nearer, with the portrayal of automobiles and trolley cars running on the street past the ODEON-TORONTO (after stopping to discharge patrons, of course!). In the sky, stars lent a romantic touch to the scene and the caption in the sans serif reverse plate capitals, "RISING MAJESTICALLY ON THE NEW SKYLINE . . . CARLTON AT YONGE", established a mood of quiet dignity.

EXCITING AND APPEALING DISPLAY on the eve of the big event established the location of the theatre, in a wash drawing, and listed some of the unusual attractions available for the original price of admission. Notice how this half-page ad, like all the others in the series, preserves an air of dignity, but at the same time catches the eye with a host of attractive qualities. It sets a style that can well be carried out in all continuing campaigns.



Again the "showplace of entertainment" theme was stressed but, in this instance, the luxurious appointments and the many innovations of the $2,000,000 structure were incorporated in the copy in unique italic type-face. A host of "firsts" were promised in a wide column beneath a handsomely engraved script "Tomorrow" and smaller sans serif capitals "AT EIGHT-THIRTY P. M."

These "new and appealing innovations for your pleasure and convenience" were evidently considered to be important factors in Canadian customer appeal: "luxury-lounging" seating space; "Thyratron electronic wall-painting" with light; a Theatre-restaurant; a "processed-weather" plant; clear screen vision and "realistic" sound reproduction; organ; courtesy desk; check rooms; prize mural; contour curtaining; Art promenade; wall-to-wall carpeting. With this advertisement, the ODEON-TORONTO began to bring up its big guns and throw everything in the public relations books at the public; but even with the pressure on, the reserved atmosphere of the messages persisted and not once did a copywriter lose his head and begin screaming, "Colossal, Super-Colossal, Etc., Etc."

Opening Day Display

Finally, on the day of the opening, a climactic full-page advertisement was placed in all three dailies. Here, the anatomy of the theatre was the selling point. Because the message itself, outlining the theatre's many features, would have been too lengthy and involved for the average newspaper reader's perusal, an open-section or isometric drawing became the dominant unit in this display. Removing a wall of the building enabled the reader to "look" directly into the building as into a doll's house with its miniature rooms. Points of more than ordinary interest, and there were at least twenty-one including the 86,000 gallon water storage tank, were labelled with letters and identified at corresponding letters by a legend in the lower right-hand corner.

In the upper left-hand corner, the time of the opening was definitely established by the prominently printed phrase, "This evening at eight-thirty"; and the claim inherent in the "Showplace of the Dominion" slogan was bulwarked by this information: "The ODEON-TORONTO swings wide its doors, welcoming you to . . . . . 'one of the five most distinguished cinemas in the world' ", followed by an asterik which led to the convincing footnote: "Opinion of Internationly Known Authorities."

As if all this—and additional comehither mention of the opening presentation—were not enough to lure the cash customers into a line stretching beyond the city limits of Toronto, the management saw fit to add two more delectable morsels of patron appeal. One of these was the in-person magnet, a small ad-within-an-ad modestly stating: "In Person Tonight, Patricia Roc, Trevor Howard, Leading British Stars, direct from Paris and London". The other was the appeal of music, a simple two line announcement that "Commencing Tomorrow doors open 11:45 A. M., Organ Interludes At All Performances".

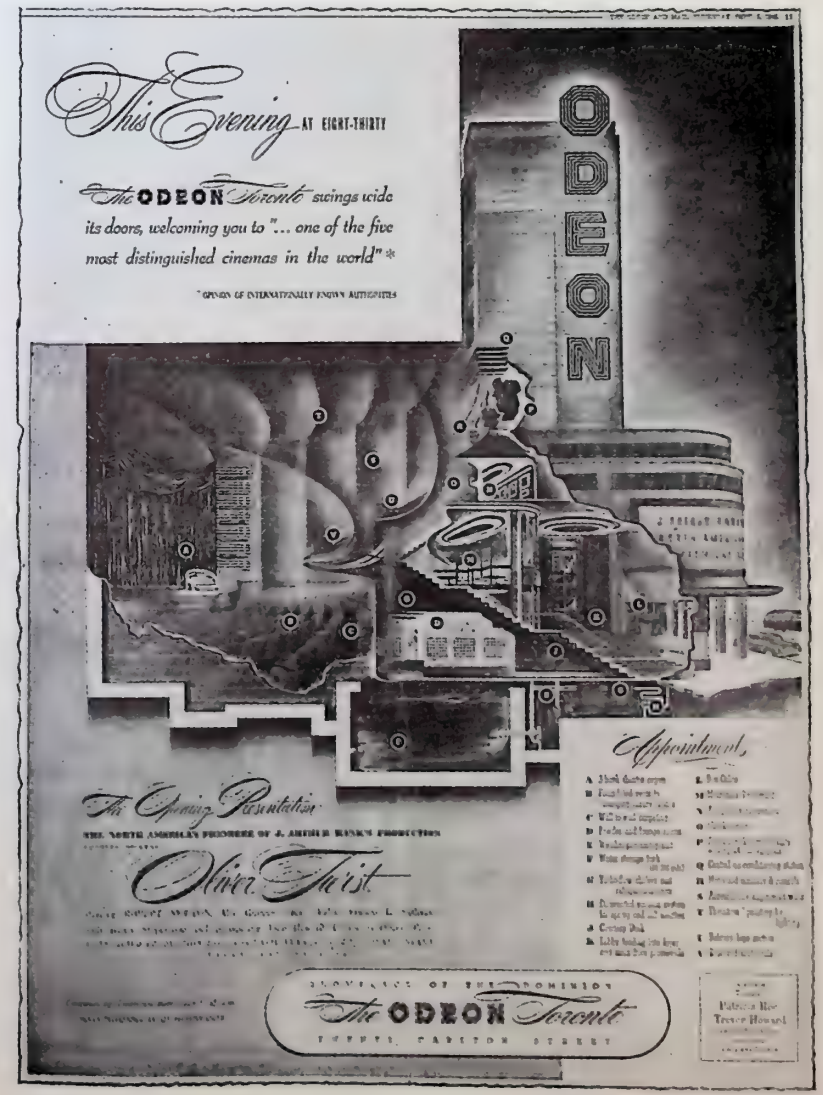
Augmenting this super-advertisement, columnists Jack Karr of the Toronto Daily Star; Roly Young, and Bruce West of The Globe and Mail swung into action the day before and the day of the premiere, divulging even more advance information on guest stars, guests of honor, art work, weight of the contour curtain, and even the pronunciation and derivation of the name "ODEON"—in short, wringing the last drop of legitimate exploitation from the available data.

The Result

The premiere was just about the ultimate in success and judging from the population concentrated at Twenty Carlton Street, Thursday Evening, September 9, 1948, the advertising campaign functioned beautifully, scoring bullseye after bullseye in its psychological marksmanship. Here are some of the effects of a skillfully planned, intelligently managed campaign which did not feel it necessary to scream to high heaven about non-existent wonders or froth at the mouth in a synthetic exhibition of enthusiasm. This page of recent motion picture history is from the hand of Jack Karr, Toronto Daily Star columnist.

"There was white-tie-and-tails stuff on Carlton Street last night. There was a blocked sidewalk, bright flashing lights, and a movie actor and actress waving from a balcony to the crowd below. When the doors of the new Odeon-Toronto theatre were finally opened, people who'd been standing in line since 5 p. m. lunged forward to sample the luxury of the country's newest movie mansion. They weren't in white ties and tails, these folks. The formal dress was worn by the dignitaries in the loge circle who came by invitation and didn't have to wait in the queue which, at one point, stretched almost around the block."

CLIMAX OF THE CAMPAIGN came in a full page opening day ad, featuring a huge anatomical display. The cut-away view enabled prospective patrons to visualize all the promised delights.



"Sell" Your Theatre, or Sell Your Theatre!

Good Pictures Come and Go, But Alert Showmanship Provides the Equalizer in Institutional Exploitation

By MONTAGUE SALMON
Managing Director, Rivoli Theatre, New York

Long accepted as an active, energetic showman who has contributed many fresh and original slants on picture and theatre merchandising, Mr. Salmon here analyzes the objectives and thought processes which have produced some of his more recent successful and attention attracting efforts. As the guiding head of one of the outstanding "carriage trade" showhouses on Broadway, a less imaginative executive would settle down to a routine operating method. But Mr. Salmon has proved that whether on Main Street or on the Main Stem, the movie patron reacts to excitement and activity.

It was my father, a pioneer London film exhibitor, who first put it to me, and very succinctly, too:

"'Sell' your theatre, or sell your theatre!"

Even back in those early days of the industry, the exhibitor did not get a steady succession of money pictures. There were those times when the prospective patron glanced up at the cheap lithograph over the reconverted store front and, deciding that what was advertised was not worth even the modest admission price, walked on.

My parent, bless him, came early to the realization that to stay in business he would have to "sell" his theatre as well as his picture, for good will was of extreme importance. It was one of the first things on which he counseled me when I determined to follow him in the business. After more than a quarter of a century as an exhibitor, I still am mindful of his admonition.

When George P. Skouras placed me in charge of the Rivoli nearly seven years ago, my fellow-managers in the Skouras organization offered congratulations.

"You won't have to bother with any more of those promotional stunts and tie-ups, eh, Monty?" they said, mindful of my constant special activity at the various theatres I had managed. "They may be all right for a neighborhood house, but you won't have to do that sort of thing any more at a de luxe Broadway pre-release theatre."

I smiled at that. I wouldn't have to, eh? Well, not exactly HAVE to. I was under no compulsion to do so. But it would undoubtedly be better if I did. And so it proved. It is immeasurably better.

Whether de luxe pre-release on Broadway, or third-run in a residential community, you have to "sell" your theatre as well as your picture if you are to get the utmost in good will. It is the only way to get patronage in profitable number since, as noted, there is no regular supply of good screen product.

With a good film, "selling" your theatre will give you an extra margin of profit. With a poor one—and this is even more important—it means a profit instead of a loss.

You "sell" your theatre with extras. Not necessarily extras of good or excellent service. At a de luxe house, in particular, the patron expects top service.

The extras are:

1. Tangible off-screen added attractions.
2. Intangible good will.

We "sell" the Rivoli on the basis that people can get their money's worth—and usually more—at all times here. That they "buy" the Rivoli even when we are obliged to play other than a top film is definite proof that we are giving moviegoers extra value.

There is always some special activity at the Rivoli. As far as possible, we try to make these affairs participation ones. People like to take part in something, either as an outlet for expression, or because of the profit motive, or both.

Special events may be divided into two kinds. One is the so-called institutional type. The other is the promotional one, or the one designed to promote your picture. Of the institutional kind, there is the general one, and the topical, or that tying in with a current event.

In our promotional activities we try to do more than merely publicize the picture. We endeavor to draw people to the theatre through the stunt itself, over and above those lured only by the film.

Thus, when we played "The Velvet Touch" we held a Rosalind Russell Caricature Contest, inspired by the fact that Sardi's Restaurant, the noted Broadway eating place of the stars, has its walls covered with caricatures of these stellar lights. The caricatures were placed on display in the theatre as soon as they were submitted by the contestants. Friends and well-wishers of the caricaturists flocked to the theatre to see the entries of their favorites. They showed up again in overwhelming numbers when prizes for the best caricatures were awarded.

Gary Cooper was a woodsman in "Unconquered," and because he did some whittling in the picture we held a contest for the best models in miniature fashioned after some aspect of the film. Would-be entrants in the competition came to the theatre to view the film for a subject for modeling. Many of them might not have come to see the picture otherwise.

When the Hubbard family took possession of the Rivoli's screen in "An-

AMERICAN LEGION COLOR GUARD and others pose with the author backstage at the Rivoli, New York, after having taken part in a special stage program designed around the merits of Constitution Day.







A PUBLIC EDUCATION ASSOCIATION fund drive to improve schools in New York is liberally sponsored in the Rivoli lobby above. Donations were accepted.

MOTHER'S DAY, hallowed by everyone, receives proper consideration in this lobby display at the upper right. The portrait was done by Frances Drangel.

AMATEUR PHOTOGRAPHERS CONTEST turned the Rivoli lobby, right, into an art museum. The exhibit attracted many patrons who voted for their favorite.

HEART CAMPAIGN funds literally rolled in due to a novel method of soliciting patron donations. Below, usherettes wear heart shaped banks on their arms.

ANN BLYTH, popular young starlet, auctioned off her hat, below right, to raise funds for the American Overseas Aid-United Nations Appeal for Children.













other Part of the Forest," we held a contest for the most original photo of a family group. Everyone who entered a photo—and most everyone is a member of a family group—came to the theatre to see whether and how their family portraits were exhibited.

I was so struck by the performance of Olivia de Havilland in "The Snake Pit" as to feel certain that she would get the Academy Award for her work in the picture. I set up a giant petition in the lobby, inviting those who thought Miss De Havilland deserving of the honor, to sign it. Most every fan of the star trooped to the theatre to sign the petition.

Our institutional stunts are characterized by us as Public Service Features. It is my contention that the motion picture theatre should perform a public service over and above that of dispensing film entertainment, and it is that which gains most of the good will which the Rivoli enjoys.

When I learned that a group of ex-GI's were studying art and had formed an Artists Chapter of the American Veterans Committee, I invited them to give a show of their art work at the Rivoli. They accepted with alacrity, because no professional art gallery would as yet give them exhibition space.

The art exhibit, like similar ones at the Rivoli, was made much of by the press and public. The press hailed it because it attracted people who ordinarily never visit an art gallery. Our patrons liked it because it gave them something to look at while waiting for the feature to start over again. The artists were extremely pleased, of course, particularly because the exhibit enabled them to make a few sales. As for us, we were made very happy by the fact that so many people came to the theatre because of the art show.

We have had other art exhibits, by individuals and by groups, all of them artists who could not afford to show their work in regular art galleries. This public service—and one which, I must confess, is not altogether altruistic on our part—has won for us a great deal of commendation as well as extra patronage.

The Rivoli has had photographic exhibits, too. When I read a suggestion voiced in a newspaper that the numerous amateur photographers' clubs hold a combined exhibit of their best work, I offered the Rivoli for the purpose. Patrons of the theatre judged the entries by indicating their favorites on printed lists, and since rivalry was keen, the contending clubs sent numerous well-wishers to the theatre "to vote correctly."

HEAT WAVES in large cities throughout the country were used to advertise the fact that the Rivoli theatre was amply air conditioned to insure patron comfort. The idea attracted many customers. A drawing contest in the Rivoli, center, offered a $25 U.S. Savings Bond as first prize to the theatre patron who entered the winning caricature of Rosalind Russell. Other prizes were also offered and all winning drawings were displayed at Sardi's Restaurant. The contest was a tie-in with the current theatre program, 'The Velvet Touch'. Youth Month was observed in the Rivoli, by means of an essay contest entitled "How I Would Run a Movie Theatre". Winners were awarded executive positions for a day. The 'new manager' settles back in his chair in the bottom photo.

A patron wrote in to ask the identity of a certain player in one of our films. It gave me the idea for a "Know Your Stars" contest. I made a display of 50 star heads and invited patrons to identify each. Prizes were offered for high-scorers. The interest was amazing. Thousands of people filled in the lists.

Many patriotic observances are celebrated at the Rivoli. A typical one is the special stage program put on each year on the eve of Columbus Day by the Good Neighbors Center, which is devoted to the cause of Pan-American solidarity. The theatre is unable to accommodate the great number of New Yorkers of Latin-American descent who come at that time.

Then there is the topical stunt. No sooner was it announced that the Friendship Train, picking up food for the starving peoples of Europe, was coming in, than the Rivoli was offered as a food repository. The Rivoli was highly lauded for that, adding to our great store of good will.

At the time of the New York Heart Campaign Fund drive we fastened heart-shaped containers on the arms of our usherettes and announced they were "carrying their hearts on their sleeves."

Just before the last Father's Day observance we held an essay contest, open only to children, on the subject of "The Most Deserving Father." A complete outfit for the male parent was the prize for the best letter. We profited hugely from the not inconceivable fact that every child had the most deserving father.

We have had good seasonal stunts, too, notably the one of the past summer. Everyone is interested in the weather when there are extremes of temperature, and especially when the thermometer takes a big rise. In mid-summer we placed a large frame in front of the theatre, containing the names of the principal cities. By means of an arrangement with one of the news services we were able to list the day's temperatures in each of those cities, together with a steady reminder that inside the Rivoli it was "always a comfortable 72 degrees." The display drew crowds daily, and when it was very hot the significance of the Rivoli's cool interior was not lost on them.

By these and numerous other special activities we "sell" the Rivoli Theatre. That we have succeeded in doing so has been proved to us again and again.

Today's mail brought a letter from a woman in Brooklyn, asking "what's going on at the Rivoli this week?" She did not ask what picture we were playing. Simply "what's going on?"

She and a great many others "buy" the Rivoli.







'KNOW YOUR STARS' contest, top, attracted many theatre patrons. Ann Blyth is shown trying her luck in listing Hollywood's favorites. A petition for awarding an Academy 'Oscar' to Olivia De-Havilland for her performance in "The Snake Pit" is signed by two theatre patrons. The scroll was mounted on two rollers and was more than a mile long. From right and left, Anatole Litvak, director of the picture, and Monty Salmon, manager of the Rivoli, New York, look on. Contributions of food packages for the Friendship Train were accepted in many theatres throughout the country. In the bottom photo Monty Salmon is shown accepting donations from two theatre patrons. H's Rivoli served as a repository for packages. A lobby display frame advertises 'The Train'.

The RIGHT COMBINATION for Bigger Profits!



Turn to the Showman's combination to Bigger Box Office Receipts . . . TRAILERS . . . ACCESSORIES . . . SPECIAL TRAILERS . . . the *tried* and *proven* patron-getting trio . . . that *brings* your patrons *to* your theatre...and brings them *back* again . . . in an ever-swelling stream . . . that opens the door to Bigger Profits and more Good Will . . . through *Effective, Low Cost,* POINT-OF-CONTACT Advertising! It's The Prize Baby's combination to Bigger and Better Business — SHOW BUSINESS!

NATIONAL Screen SERVICE
PRIZE BABY OF THE INDUSTRY

RECOMMENDED PRACTICES *and* MAINTENANCE

1948-49

Costs Consistent with Good Business

A Comparative Review of Theatre Finance Including Expenses, Profits and Valuations Based on Experience

By JAY EMANUEL*
Theatre Circuit Owner and Publisher

Like any other business, the moving picture theatre operates on the general principle of profit. This simply means that after all expenses are deducted, the owner expects to find some cash left in the till. If this principle is violated, if overhead exceeds receipts too often, the business is headed for trouble.

In this study of the financial side of the theatre, information is presented to assist theatremen in their theatre budgeting. Ordinary expense items are listed in terms of percentages derived from reliable estimates and, balancing the picture, profits and valuations are also given. These percentages represent the budget proportions best suited to theatre operation according to the experience of practical theatre men.

The dollar that changes hands at the box office today may have shrunk by pre-war standards but even in a slightly anemic condition it still has some of its old green magic left. Now, in order to take full advantage of this debilitated dollar, vintage of the late forties, every economy-minded manager ought to have a working knowledge of its anatomy.

Once the overhead is broken down into its component parts; and once the problem of ascertaining a fair percentage charge for the different items in the theatre budget is worked out, allocation of operating expenses will be on a sounder economic basis and the manager will have some positive data at his finger tips when he struggles with the budget.

Not that this allocation can assume the dignified vestments of an exact science. Variation seems to be the special demon of theatre finance. But what at first glance might appear a major mystery of modern accounting, resolves itself into a reasonable basis of comparison when established estimates are studied in the light of each manager's own personal experience.

Cost of Film

Film rental, for example. The movie industry has never formulated a definite set of percentage figures that would be applicable to all theatres. While it is not uncommon to find many houses paying 20% of their gross receipts for film, it is definite that some theatres spend even less than this amount. It is even possible that because of irreducible operating overhead such low percentage theatres make little profit or actually lose money while some theatre paying up to 40% is in the profit column. Generally speaking it would be safe to estimate 35% of the gross as a fair film rental for first run, key neighborhood and key town operations.

Also, there are no hard and fast rules to keep some owners from going overboard in their zeal to corner the celluloid market.

One metropolitan theatre-owner who had difficulty in getting first-run product offered a major distributor 70% of the gross in a burst of persuasive strategy, explaining this abnormal expenditure was justified by small overhead in his other departments. The sad commentary on this episode is that even this surcharged financial inducement did not fetch the badly wanted films, because the distributor knew that the much bigger and better located opposition run would bring a much bigger net return in spite of only a normal percentage of perhaps 35 to 40%.

Years ago, when Adolph Zukor, then president of Paramount Pictures, stated that, in his opinion, 33⅓% represented a fair percentage of film cost. Other executives felt that 25% to 30% plus another 3 or 5% for shorts represented a fair allocation for film costs. Since pictures at that time were being sold generally on a flat basis, this estimate caused considerable comment and criticism in the industry. But there has been a decided change in thinking since then!

While these figures—starting at about 20% and running up to 33⅓%—will probably appeal to those exhibitors who are paying more than this percentage, they will of course be less attractive to that fortunate group of exhibitors who are now paying less. However, the approximate range of 20 to 33⅓% establishes a fairly good basis for comparison and gives the average theatre owner a tentative yardstick with which to measure his own film expenditures.

Road show attractions usually stipulate a percentage division of 65-35, 70-30, or 75-25, with the distributor receiving the larger figure in each group. However, there is now an additional expenditure on the distributor's budget for advertising, usually any amount over and above the house allotment for this purpose. If a treasurer is required (for road shows the union insists on the installation of a treasurer, who is identical with a cashier except that the title requires a higher rate of pay), the distributor pays this charge.

Some exhibitors have made arrangements for the showing of road show attractions in which a specific amount is named as minimum and, after their audited house expenses are made, they receive as profit an additional 10% or 15% of the gross.

Generally speaking, theatres enjoying a good run in neighborhood sections, or key towns, are paying between 35% and 40% and are happy to do so because the arrangement enables them to make money.

Rent

Next to films, rent is the most important item in the budget from the cost angle. Although variations exist in this department also, several authoritative estimates now available make the formulation of this figure fairly easy. "Poor's Reports" indicate that 15% of the gross take is a justified outlay and, in the trade, the Associated Theatre Owners of Indiana concurred some time ago that this amount was a proper rental figure.

Some experts in this field feel that 12 to 15% represents a true figure; others have established 15% as a maximum but with the additional items of taxes, insurance, water rent and maintenance thrown in, probably to give a truer picture of this part of the overhead.

However, all of the above would refer to a theatre that is completely equipped with seats, projection and sound equipment and accessories, air conditioning, carpets, decoration, sign work, furniture and fixtures in good workable order for prompt and efficient modern management.

As with films, specific instances of rentals reveal departures from the norm. In one metropolitan town, an important neighborhood theatre with 500 seats pays $20.00 per seat annual rent as the result of a personal percentage arrangement. Very small neighborhood houses have made rental deals on the basis of 50 cents per seat per month; while slightly larger spots have paid $1.00 per seat per month. In big towns and cities, houses have paid up to $3.00 on this basis, specific rentals always depending on the locality and other individual variables, including clearance problems.

There are also "four wall" deals, where the owner only supplies the basic

**Jay Emanuel's diversified theatre background has endowed him with special authority to discuss the complex field of theatre finance. A successful theatre operator for over 37 years, Mr. Emanuel's experience includes first-run, neighborhood and country theatres. In addition he has served as Receiver in the bankruptcy case of a large vaudeville and moving picture theatre; which finally returned 100% to the stockholders and has acted as an expert witness in the Federal Courts. For 15 years Mr. Emanuel was also coincidentally engaged in both major and states right distribution so that he has experienced a broad view that is not enjoyed by many executives within the industry.*

building complete with the heating and wiring, and the tenant must supply the other equipment outlined above. Under such an arrangement 10% is the usual maximum.

The fact that adds a somewhat acrid flavor to all this discussion of rent expenditure is that, from information now available, few other businesses pay as much as 12 to 15% of their gross for this item. A list (Fig. 1) as published by one of the large real estate organizations discloses, that under normal conditions, out of 47 businesses quoted, only two pay as much or more than theatres. And, understandably enough, these two are storage garages and parking lots, where the commodity merchandised is the landlord's space on which he is entitled to a large participation.

As one prominent independent circuit owner has very aptly stated it: "I think one of the reasons why theatre rentals have been high is because originally they had been considered a very risky type of one-purpose building tenant. The last 20 years has proved this to be very erroneous thinking. Theatres have paid good rentals and have been good tenants, and have improved the landlord's surrounding properties. Therefore, rental percentages should be on the basis of a very good risk tenant, and that means lower rentals—or we'll build our own."

General Overhead

Overhead, which derives its major substance from film costs and rental charges, also includes a number of less bulky but nevertheless appreciable items. Repairs and supplies, for example, each average about 2 to 3%. Advertising, including trailers, newspapers, posters and the other paraphernalia of publicity, runs approximately 8%.

It is not uncommon, however, for a metropolitan theatre grossing $20,000. to $30,000. to allow only $1,000. for its newspaper advertising. For additional expenditures, such houses depend largely on the film distributor. Most distributors, being human, would be well pleased if all exhibitors spent as much as 8% for the advertising budget and spent it consistently. Film delivery and sound charges together average about 1%; insurance from 1 to 2%; improvements and amortization, 2%; depreciation on equipment from 3 to 5%; and building depreciation from 2 to 5%.

Home office expenses for circuit or group operation average not over 5% of the gross in many cases half that figure; and electricity and heat generally speaking, make up about 3%. Salaries—probably another one of the most controversial of subjects but always one of the favorite topics of the day—cannot be too definitely established but on the basis of experience, 15 to 22% would seem to be a fair allocation.

Now, if you have gone to the trouble to total up the lowest and the highest of all of the above, you will find that the fortunate theoretical owner who could accomplish the former would have 26% for profit, while the unfortunate owner who paid the highest would soon be out of business with a 4 to 5% loss. That is the tenuous thread of good management.

All expenses remain more or less fixed, independent to a certain extent of external influences. For example, a 10% drop in the gross receipts would lower the film rental by only 3⅓%. This condition, while interesting as an economic phenomenon, emphasizes the need for careful budgeting.

"FAIR AVERAGE" of Store's Gross Volume for Rent

Type of Store	Percentage for Rent
Art shops	10-12
Auto accessories	6-8
Auto agencies	1½-2½
Bakeries	6-7
Barber shops	10-15
Beauty shops—merchandise	10
service	12½-15
Books—new	8-10
—used	12-15
Candy	7-10
Candy with luncheon	10-12½
Cigars and tobacco	5-6
Cleaners and Dyers	10
Credit clothing	5-8
Department stores	3-4
Drugs—chain	5-8
—individual	6-9
Electrical goods	5-7
Five cent-10c, 5-10-25c, 5c-$1.00	5-7
Florists	10-15
Fruits and Vegetables	10-12
Furniture—cash	5-7
—credit	6-8
Furriers	8-10
Garage—storage	40-50
Gas stations	1c gal.
Groceries—chain	2½-4
—individual	3-5
Haberdashery	8-10
Hardware	5-7
Hosiery and knit goods	8-10
Jewelry	8-10
Leather goods	8-10
Liquor stores	6
Meat markets—chain	4-6
individual	5-7
Men's clothing	6-8
Men's furnishings	8-10
Men's hats	8-10
Men's shoes	7-9
Millinery	10-15
Optical stores	10-12
Parking lots	40-50
Pianos and musical instruments	6-8
Radios	6-8
Restaurants—regular	8-10
cafeteria	5-7
Sporting goods	6-8
Taverns	6-8
Theatres—motion picture.	15-20
—combination of motion picture and vaudeville	12½
Women's furnishings	8-10
Women's dresses, cloaks, and suits	6-8
Women's shoes	7-10
Women's cotton wear	8

FIG. 1—The table shown is not intended to present a fixed rental percentage figure for the particular businesses appearing in it; but rather indicate the "fair average" arrived at in a nationwide survey. No indication is given of the number or locations of the businesses analyzed in any one group.

Profit

So far, the discussion has concentrated on the negative aspects of the budget, with the all-too-familiar list of expenses that confront all exhibitors occupying the major part of the thesis. But, fortunately, even after all the hydra-headed expenses have been extracted, there are still signs of financial life in the undernourished dollar we started with. Yes, appearing on the horizon like a contingent of U. S. Cavalry galloping to the heroine's rescue in a good old silent Western, profit rears its beautiful head.

Information obtained in conversations with exhibitors all over the country indicates that a profit of 10%, while not possible to attain consistently, is considered equitable. This news may come as a shock to some operators, but it must be remembered that this is an estimated average for the entire United States and, depending on the financial physique of each community or region, will fluctuate above or below the 10% estimate.

A topic rather closely allied to the fascinating subject of profit is that of fixed assets and their valuation. Fixed assets, although they do not affect the manager's pocket so directly as current expenses and profits, do influence the entire economic history of the theatre by: providing the place and the means for making profits; and, accounting for the lion's share of the expenses.

Fixed assets include: the building, in which the business is conducted; the equipment, which includes machinery, furniture and fixtures necessary for the efficient operation of the business. Their importance to the manager aside from their unquestioned necessity consists of their value. In this latter respect they exercise a tremendous influence on the fate of the business.

Evaluating the Theatre

At different times, exhibitors in discussions of financial matters, have agreed with the real estate experts that the value of a building can be more or less accurately determined by multiplying the monthly rental by a factor of 100 or 125. Thus, a theatre building with a rental of $1,000 per month would represent in round figures a value of $100,000 to $125,000.

The value of equipment is generally assumed to be not in excess of 20 to 25% of the value of the building and land; and probably tends towards the lower percentage as time increases the rate of depreciation.

Finally, the value of the business itself can be estimated to be 1 to 3 times the annual net profit, based on a 5 year period. In rare instances, when the theatre has an exceptional set-up and the outlook for the future is particularly bright, 4 times the annual net profit has been considered a just estimate. The following excerpt from a 1948 Variety report adds an interesting sidelight on evaluation of the business:

"With the pressure on to close out partnership theatres attacked in the Government anti-trust action, Paramount has reportedly fixed a formula for price on a number of its circuits. Par is asking for the book value of the theatres plus three times the profit for

one year. Latter figure is to be determined by averaging the profits for the last three years.

"One such prospective purchaser turned down the deal because he felt the price was too high. Nonetheless, Par's book values for theatres is a long drop below present valuations since they were fixed in the pre-war era when profits and material costs were far lower."

As yet, no mathematical formula has been devised for evaluating the worth of a business in terms of the manager's ability to win friends and influence people but this is definitely one of those intangible factors which enter into a really accurate breakdown of theatre income.

Conclusion

Recently an outstanding firm of certified public accountants worked out a composite percentage table based on the budget on several theatres. Their figures are presented in Fig. 2.

In any discussion of theatre operating expenses, the reader should always remember that no accountant, mathematician, or statistician can establish an infallible blanket criterion for all of the more than 18,000 theatres now operating in the United States. To attempt to do so would at once place the perpetrator of such fallacious reasoning in the same category as those inventors who claim to have discovered perpetual motion.

Theatre Budget Table

	Average for a group of 26 neighborhood theatres	Average for producer circuit theatres
Film costs	29.4%	.....
Premiums	3.5%	.....
Total	32.9%	32%
Rent	9.6%	12%
Advertising	7.6%	7%
Salaries	18.5%	17%
Taxes	1.3%	2%
Insurance	.9%	
Light, power, heat	4.0%	3%
Maintenance	4.5%	2%
Depreciation	3.9%	5%
Other expenses	4.5%	5%
Total	87.7%	85%
Net profit before deduction of income taxes and officers' salaries	12.3%	15%
Total	100.0%	100.0%

FIG. 2

The information and figures given in this article will serve a useful purpose only if each exhibitor utilizes them to set up a tentative norm for his own guidance. With such a practical and at the same time flexible guide he can decide with some degree of accuracy whether or not he is making a fair profit, or if his expenses are out of line. If his business seems too sluggish, he can easily check his expense list against that of other exhibitors and discover which items are abnormal.

On the other hand, if a personally conducted survey indicates that his margin of profit is well above average, he will know that his business is healthy and that he can keep that bottle of red ink locked in the theatre safe for a long time to come.

IF PROJECTORS WERE BOXOFFICES . . .

Back in the days of our youth, there was a prominent manufacturer of men's garters who used the advertising slogan: "If you wore them around your neck, you'd change them more often!" While he was caught in the later vogue of "sloppy Joes," with socks that drooped over the shoe tops, and has probably by now switched to making the more conspicuous Countess Mara ties that do get changed, there was and still is, a lot of merit to that slogan. And we don't mean in relation to garters!

In many theatres that we know (and according to servicemen and supply dealers, there are thousands more just like them), there are projector heads, amplifiers, lamp houses, and sound heads that should long ago have been hit with an axe and retired.

Now, while it is a great tribute to their fine manufacture originally that many of these pieces of equipment are still turning out a type of sight and sound that causes no actual distress to, or squawk from, the paying audience; we wonder how many theatremen realize the "penny wise and pound foolish" policy it indicates? The same owner who will spend thousands of dollars for a new sign or a new boxoffice, or blow his bankroll on over-upholstered chairs and air conditioning, but will send his 20 year old projector heads back for repair or even a factory rebuilding, is very shortsighted indeed.

The sign, the boxoffice, the chairs, and the air conditioning are necessary, but they are not enough to make and keep a satisfied patronage. Entertaining sound pictures are still what this industry is selling and what creates the traffic flow past that boxoffice on which we all live. No sound picture can accomplish its maximum in entertainment if the screen light is poor, the picture is jumpy, or the sound fluctuates and rasps even slightly.

Unfortunately, the necessary fire walls prevent the patron from seeing the projection room, just as the draperies and screen obscure the speaker assembly, so that the patron isn't as conscious of decrepit equipment in those locations as he would be of a rusted out sign or a rococo boxoffice.

But, like the garter of old, you can just bet that: If the projector was out front where the boxoffice is, it would be changed more often.

As it is today, many an old projector is a millstone around the neck of an otherwise well appointed theatre, and the owner doesn't seem to realize it.

Reprint of an Editorial originally published in the PHYSICAL THEATRE DEPARTMENT of THE EXHIBITOR under date of June 30, 1948.

Currently Allowed Depreciation Schedules

Treasury Department Attitude on High Salvage Values Requires Readjustment of Accounting by Most Theatres

Even the most rugged equipment, however well built, eventually reaches the end of its maximum efficient use life. Modern business methods of accounting and cost control have set up certain depreciation schedules which annually charge a certain percentage of the original cost of any asset to build a fund for its replacement at its exhaustion date. Because the trade-in allowance or clearance value of unrebuilt used equipment was little more, and sometimes less, than the bulk of scrap metal it contained, no salvage value was anticipated; and should one result, it was either applied against the new purchase to arrive at a net replacement cost or credited to the income of the replacement year.

Classification of Depreciables

While salvage values will be treated at greater length in this overall survey of the current tax picture, it is important to first cover the number of years of average use life which the Treasury Department attributes to: (1) The Theatre Building itself; (2) The Special Equipment used mainly by theatres; and (3) The Building Equipment applicable to all structures. On this average use life is based the allowable depreciation percentages acceptable to Treasury agents, with possible minor variations either way in the event that unusual conditions exist. These are the minimum rates allowed. There have been many instances where taxpayers have resisted the Commissioner in his application of these minimum rates and have appealed to the Tax Court. While the latter usually upholds the Commissioner and "the book", there have been cases where higher rates were allowed. All of the following depreciation standards have been approved by the U. S. Treasury Department in Bureau of Internal Revenue Bulletin "F".

The Theatre Building

With regard to buildings as such, the Treasury Department recognizes that the useful life of a building for business purposes depends to a large extent on the suitability of the structure to its use and location, its architectural quality, the rate of change in population, the shifting of land values, as well as the extent of maintenance and rehabilitations.

The extent to which the equipment of a building, such as heating, plumbing, electrical wiring and fixtures, elevators, and other improvements, must be replaced is an important factor in determining the over-all rate of depreciation to be applied to the building and its equipment. Relating to Theatre Buildings themselves, the Treasury Department has approved certain rates (Fig. 1).

Theatre men have been complaining that present depreciation rates on their structure and equipment are inadequate in the face of current inflated replacement costs. But the Treasury Department is using the present high price level as grounds for still further cutting allowable depreciation. The key to their reasoning is salvage value.

Because the Tax Court has now indicated in a current test case that it will back up the Treasury Department on salvage values, it behooves every theatre owner to re-assay his assets and set up new depreciation rates. A schedule of the standard minimum depreciation rates on theatre buildings and theatre equipment as approved by the U.S. Treasury Department (Bureau of Internal Revenue Bulletin "F") is included.

Special Theatre Equipment

Not taken into consideration under this schedule is the fact that theatres more than any other building or place of public assembly, with the possible exception of night clubs, are dependent on public taste for the admissions which constitute their income, so that frequent remodeling, refurnishing, and replacement is necessary to their very existence. As a result, a supplementary table (Fig. 2) has been prepared showing the approved average use life of Special Equipment, found mainly in theatres, on which depreciation percentages may be based. While in the general term, theatre equipment is considered to have an average life of 15 years, the actual range is between 3 years and 33 years.

Building Equipment

The approved composite rate on Theatre Buildings includes the normal building equipment listed in connection with it, but more specific lists (Fig. 3) have been approved covering such special Building Equipment as is generally referred to as the mechanical trades which can be replaced with a minimum of change in the basic building structure. Except for those noted with an asterisk, it will be observed that all have a life expectancy of somewhere less than the building itself, with a range of from 5 years to 25 years.

Once again, some special or unusual conditions may exist which will present an acceptable claim for a variation either way from the above; but these years of use life, from which corresponding percentages can be easily worked, represent the approved yardsticks of the Treasury Department.

(Fig. 1)

THEATRE BUILDING DEPRECIATION

Type of construction	Good	Average	Cheap
Composite rate (percent)	2½%	3%	3½%
Composite rate (years)	40	33⅓	28½

Average useful life (years) of

SPECIAL THEATRE EQUIPMENT

Cabinets, record and film	15
Carpets	8
Choppers, ticket	10
Counterweight systems	20
Counting machines	10
Curtains:	
Asbestos or steel	33
Machine automatic	20
Stage	8
Decorations, painted mural, etc.	12
Dimmers, state and studio	8
Draperies	8
Elevators, orchestra pit	20
Fans, exhaust and ventilating	15
Furniture, lobby and foyer	15
Lights, stage, Kleig, etc.	20
Linoleum and rubber flooring	10
Mats, rubber and linoleum	10
Mirrors	20
Orchestra phones	10
Orchestra stands and chairs	15
Organs	10
Pianos	10
Projectors:	
Lantern slide	15
Motion picture	10
Registers, ticket	10
Rewinders, film	15
Scenery, stage	3
Seats	20
Signal systems	15
Sound equipment	10
Splicers, film	15
Stereopticons	15
Transverters	15
Waxers and renovators, film	10

(Fig. 2)

Changing Salvage Values

The same nationally prominent firm of Certified Public Accountants, which su-

Average useful life (years) of

BUILDING EQUIPMENT

Air conditioning:	
Air conditioning systems—	
Large—over 20 tons	20
Medium—5 to 15 tons	15
Small—under 5 tons	10
Air washer. (See Dehumidifier.)	
Compressors—	
Refrigerating	20
Air for pneumatic controls	20
Condensers	
Shell and tube	20
Double pipe	20
Evaporation	15
Coolers, water-tank and coil or shell and tube	20
Dehumidifier	10
Drums, purge or surge	20
Ducts and other sheet metal work	*
Fans	15
Filters, air, oil, self-cleaning	20
Dry Cleanable	10
Gauges	15
Grilles and registers—	
Anemostats	20
Grilles and registers—	
Wall Type	20
Ceiling	20
Window units	15
Plaques	20
Santrols	*
Heaters—Electric Heaters	15
Boiler, oil burner and tank	20
Booster heaters	20
Finned tube heaters, steam water cleanable tube	20
Preheaters and reheaters	20
Water heaters, open or closed type	20
Insulation—	
Cork, cold pipes and tanks	20
Magnesia, hot pipes	15
Wool felt	20
Asbestos	15
Louvres and screens, fresh air—	
Copper	25
Steel	15
Manometers	15
Motors—	
Synchronous and exciter set	20
Induction, indoor	20
Induction, weatherproof for outdoor	20
Piping, refrigerant and other	20
Pumps—	
Chilled water	20
Condenser water	20
Condensate	20
Dehumidifiers	22
Evaporative Condenser	15
Sump	25
Well	25
Receivers, refrigerant	25
Regulators, suction or static pressure	5
Silica gel beds	15
Spray pond	15
Switchboard, electric panel	20
Thermometers, room type or recording	15
Tower, cooling	15
Valves—	
Automatic expansion and by-pass	5
Relief	20
Solenoid	15
Water regulating	20
Ammeters	15
Clocks	15
Clocks, watchman	15
Compressors, air and vacuum	20
Electric clock systems:	
Clocks, time	20
Conduits, fittings and wiring (See Lighting systems)	
Motors and generators	20
Switch equipment—	
Boxes	*
Switch parts	20
Elevators:	
Freight	25
Passenger	20
Fire equipment:	
Fire alarm systems	25
Movable equipment	20
Sprinkler system	*
Guards, machine	25
Heaters, electric	10
Heaters, gas	15
Heating systems:	
Boilers and furnaces	20
Burner equipment—	
Gas	16
Oil	10
Radiators	25
Lighting systems:	
Conduits and fittings	*
Wiring	20
Fixtures	15
Miscellaneous facilities:	
Awnings	5
Doors, louvre, ventilating	15
Incinerators	14
Safes and vaults	*
Screens, window	10
Shades	5
Venetian blinds	8
Plumbing:	
Faucets and cushing valves	15
Bath tubs, lavatories, toilet bowls, etc.	25
Pipes—	
Brass or copper	*
Iron, cold-water	25
Iron, hot-water or steam	20
Sewer, cast-iron or vitrified	*
Valves—	
Brass body, water or steam	*
Iron body, water or steam	20
Pumps:	
Suction, pressure and sump	13
Roofs:	
Asbestos	25
Asphalt and tar (prepared)	15
Galvanized iron—	
Light or cold dipped	15
Heavy or hot dipped	20
Tar and gravel (5 ply)	20
Tarred felt	10
Copper	*
Slate	*
Tile	*
Tin	*
Starters, electric	20
Switchboards, electric	25
Tanks and vats, water:	
Metal	25
Wood	15
Telephone equipment:	
Conduits and fitting	*
Wiring and fixtures	20
Tools, small, miscellaneous	5
Transformers	25
Trucks, conveyance (within building)	10
Trucks, lift	15
Voltmeters	15
Welfare equipment:	
Athletic	10
Cafeteria	10
Hospital and first aid	10
Police and Fire	10
Wells and well pumps	25

* Indicates items classed "FOR THE LIFE OF THE BUILDING"

pervises the accounting and tax returns of more than 100 theatres and accordingly was consulted regarding the above, has pointed out what they consider to be one of the most important modern developments affecting the theatre business. This development is the growing Treasury Department interest in salvage value.

In the first place, replacement prices on nearly everything have soared far beyond original purchase prices so that business men are complaining that their current depreciation rates are inadequate. To counter this, Treasury agents point to the fact that prices of second hand equipment and even scrap merchandise are soaring so that much used assets today are worth more in the open market than their original purchase price so that there should be little or no depreciation. Agents therefore are now carefully checking salvage values used in depreciation. And some agents are not only trying to cut down depreciation allowances in the year the asset is sold at the inflated price; but are insisting that depreciation deductions be reduced in all open years.

An Illustration

How devastating this could be, is easy to illustrate.

In 1930, John Jones bought complete new theatre seating at a cost of $10,000, and has very legally been charging off its depreciation on a 20-year basis with no salvage value. With only two more years of life expectancy, the $500 he charged to depreciation during 1948, or 18 years later, brings the remaining book value to $1000. However, the value of these seats in the open market today, i. e. salvage value, is $3000. No further deductions would be allowed until the salvage value dropped below the depreciation book value.

And some agents might even insist that he go back through the open years since he reached a corresponding $3000 depreciated book value, and pay up on the $500 of additional profit each year therefore claimed.

The Tax Court has now indicated that it will back up the Treasury . . . A corporation owned about 45 pieces of automotive equipment which it depreciated at the rate of 25% per year. No salvage value was taken into account. The Commissioner approved the 25% depreciation rate, but held that a salvage value of 20% of the cost must be set up. The Tax Court agreed. It said that while the salvage value may have been negligible in pre-war years, the wartime shortage has boosted the value of used auto equipment. (W. H. Norris Lumber Company, Inc., T.C. Memo Dkt. No. 16314, 10/12/48).

Here is a subject to be considered by all theatre owners, and to be discussed with their tax consultants. It may very well be that a new scheduling of depreciation rates is in order.

Possible Future Procedure

From an accounting standpoint, and from the angle of good business practice, it may be that higher rates of depreciation than the current Treasury Department minimum standards should be set up regardless of whether the Tax Commissioner allows them or not; and an adequate fund set aside to take care of replacement. Otherwise, the theatre owner will be kidding himself with a completely inadequate replacement budget.

Prices today of most replacement items are nearly double those of the same items in 1938, so it can be readily seen that if replacement reserves have been set up on 1938 or prior prices, any business will find its fund woefully inadequate for replacement needs at today's level. This factor is being stressed in all current annual reports of companies listed on the New York and Curb Stock Exchanges. To quote from the December 1, 1948, quarterly memo to stockholders by The Borden Company:

"Depreciation rates are based largely on original costs that are far below current replacement costs. The capital expenditure budget for 1949, together with authorizations of previous years yet to be spent, will exceed, to a material extent, estimated depreciation accruals for 1949. Until depreciation accruals are based upon values approximating present costs, or unless prevailing prices for replacements decline, our accruals will be insufficient to cover normal replacement costs for some years yet to come."

In the 28th Annual Report to stockholders under date of March 10, 1948, president F. J. Emmerich, of the Allied Chemical and Dye Corporation, also stated:

"Costs of construction and replacements were at a new high level. While it is not possible to forecast future price levels, in order to provide for excessive construction and replacement costs and other costs applicable to the year, $10,000,000 was set aside out of 1947 income as an addition to the general contingency reserve."

So this is not a condition as local to the theatre industry as a series of bad pictures or television. It is a reflection of the times. But a successful businessman must keep in tune with developments and in close touch with a qualified accountant.

ANOTHER RESULT OF HIGH COSTS

Unless the inflationary spiral is checked and the high cost of living reduced, the nation is likely to experience a wave of arson by new home owners, it was forecast recently.

The speaker was Chief Fire Marshal Thomas P. Brophy of the New York Fire Department, who imparted his gloomy prediction to the final session of the fifty-fifth annual conference of the International Association of Chiefs of Police at the Pennsylvania Hotel.

Pointing out that the arson rate now was up slightly for the country as a whole, Marshal Brophy suggested that it would rise even more sharply if prices did not come down and if only a "slight" depression should occur.

"There is a strong possibility of an increase in arson in the near future unless the high cost of living and other inflationary trends are halted," he declared.

"Many persons have purchased homes at exorbitant rates and unwarranted prices and in the event of even a slight depression, some can be expected to resort to arson to collect fire insurance rather than lose whatever money they have invested."

Speaking for the association's committee on arson, of which he is chairman, Marshal Brophy pointed out that arsonists are responsible for more lives lost and more property destroyed than is generally realized. To offset this fact, he called for increased training of fire investigators so that blazes of dubious origin might be more readily recognized.

Sanitary Maintenance has Boxoffice Importance

Recommended Cleaning and Disinfecting Practices That Will Guarantee Clean Theatre Washrooms

Even over a comparatively short period of time, toilet bowls and urinals collect certain salt and sugar secretions. This organic material forms a hard mass which, in time, may cause stoppages in the pipes and result in costly plumbing bills. This excrement is also the cause of offensive odors and generally unpleasant conditions that surround so many public washrooms. The only efficient method for removing such unsatisfactory conditions is one which eliminates the cause of these disagreeable odors.

When you remove the cause of unpleasant hidden odors your most troublesome washroom problems automatically disappear.

A vitally necessary step in helping to keep washrooms in the proper sanitary manner is the regular use of an efficient bowl cleaner. Bowls and lavatories that are used constantly by either employees or patrons need more than mere janitorial maintenance.

Eliminate Odors

When deodorizing an offensive washroom, a bowl cleaner with efficient permeating and penetrating power should be applied. The cleaner, allowed adequate time of moist contact, should soak into cracks, breaks, crevices and recesses to insure more thorough sanitation, thereby helping to control disease and eliminate obnoxious odors.

Complete theatre maintenance requires not only that janitors perform a daily schedule of vacuuming and mopping . . . but that a "heavy duty" job of cleaning and disinfecting be done as well. This is especially important in washrooms.

A daily sanitation program is most effective when the proper methods of mopping floors and scrubbing and washing down surfaces on toilet seats, urinals, doors, walls. door knobs and various washroom fixtures are applied. All points of body contact should be given especial attention to insure healthful sanitation.

All these tasks may be made easier with the use of an efficient spray for such inaccessible places as behind fixtures, corners. crevices, and areas normally not reached by scrubbing or mopping. The spray should be non-irritating to the nasal passages and, harmless to the skin.

Certain odors are produced by ordinary usage but the worst are caused by improper flushing. If a toilet bowl or urinal is flushed too soon, as is often the case, it is evident that the traps, instead of preventing odors from getting into the room, will be producing foul odors all their own. It is necessary, therefore, to use a special deodorant which will help counteract these objectionable odors.

Deodorizing Methods

Offensive washroom odors can be overcome at their source, by an automatic drip machine placed above toilets and urinals. This machine constantly drops an aromatic liquid into the bowl which spreads over the surface of the water and tends to halt the odor almost before it starts.

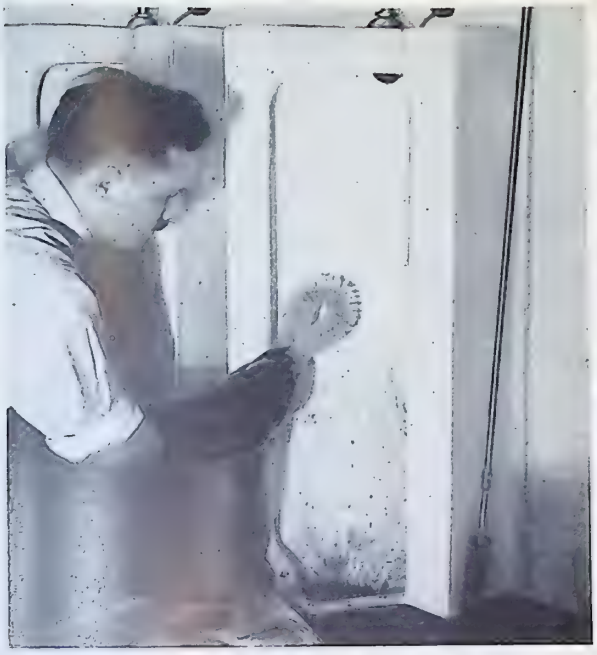
This method has a number of decided advantages over other means of deodorization. First, the Drip Fluid itself has an aromatic odor. Second, as there are perforations in the Drip Machine, the air is permitted to circulate around the wick and thus deodorize the atmosphere. Third, drops of the fluid are released automatically at regular intervals into the bowl and urinal, and act as a deodorizer at the source of the odor. This method is one of prevention rather than camouflage.

UNFORTUNATELY, many of the nation's 18,000 theatre washrooms discredit the entire industry with their filthy and unsanitary conditions.



STEP NUMBER 1 in a thorough cleaning of urinals should include removing the strainer to gain easier access to the trap where odors accumulate.





STEP NUMBER 2 includes the cleaning of all walls to prevent dirt from seeping into cracks which would otherwise hold filth and odors.



STEP NUMBER 3 requires a special tool to insure removing of residue from drain and trap. Normal cleaning methods seldom include such thoroughness.

It is important that the proper deodorizing fluid be chosen to obtain the most satisfactory results. Among the fluids available are Mintoda, a deodorizing fluid with the aroma of mint; Wintergreen; Dripco Special, a sweet smelling pine, as well as Euchrelyptum, an agreeable yet powerful deodorant and Retinole, an extra pungent fluid for washrooms with especially heavy traffic.

Disinfectants

The primary purpose of a disinfectant is to kill certain harmful organisms and its ability to do this efficiently is one of the most essential tests of its value. Cleansers such as soap and water have little disinfecting value and many disinfectants have no cleaning power. Thus it is important to choose, for general sanitation purposes, a product that combines both cleansing and disinfecting. This will not only reduce labor costs since the two jobs are being done at one time, but it will tend to effect economies in materials since one product is doing the work of two. In addition, one

STEP NUMBER 4 is done with the other end of the special tool. The drain is thoroughly brushed so that hidden portions are as clean as exposed.



TOILETS are equally important and can be similarly cleansed. Scrubbing the bowl will remove stains which are the hosts to future troubles.



should bear in mind when selecting a disinfectant, to obtain one which mixes readily and keeps a stable emulsion.

Coro-Noleum, a coal tar disinfectant, is widely used as a disinfectant cleanser for mopping, scrubbing and general cleaning because it has the power to kill the germs of many communicable diseases in addition to cleansing and eliminating the need of soap. Thus, Coro-Noleum acts as a deodorant and a cleanser as well as a disinfectant. It has proven itself to be an exceptionally efficient and economical disinfectant that will not produce objectionably strong odors nor leave gummy residues that will require additional rinsing and thus add unnecessary labor and expense. Whereas ordinary deodorants may merely cover up odors, Coro-Noleum is an efficient deodorant. It helps overcome many of the unsanitary conditions which cause bad odors.

Theatre managers and owners, among many others, all agree that proper washroom sanitation is of paramount importance in helping protect the good health and welfare of patrons and employees. The cost of an efficient sanitation program is negative when you remember the importance of clean washrooms in maintaining customer good will. Theatre managers and owners cannot afford to neglect this important issue.

Unsanitary conditions in the washrooms of theatres that pride themselves on modern equipment and up-to-date methods should no longer be permitted to exist.

Cleansing Program

Proper cleaning, disinfecting and deodorizing of washrooms can be accomplished simply, scientifically and very economically. An efficient disinfecting cleanser with deodorizing properties is the first step in washroom sanitation. Ordinary cleansing methods, despite their frequency, are too often insufficient to overcome the offensive odors emanating from various sources in lavatories and a daily sanitation program is imperative to help overcome nauseating washroom odors.

Maintaining general cleanliness, in addition to abolishing obnoxious odors, is of prime importance in the prevention of communicable diseases. Some authorities state that almost 90 per cent of most skin diseases could be prevented by proper cleansing methods. Various types of fluid soaps dispensed by sanitary containers are excellent in this department.

The general public has learned to appreciate the superiority of liquid soap over cake soap and knows that the liquid form is more sanitary. Management appreciates the fact that the use of liquid soap over cake soap eliminates waste of partially used cake soap which soaks away in imperfectly drained soap dishes. Furthermore, about 15 per cent of a cake of soap is usually thrown away because, when worn fairly thin, the cake is no longer convenient to use.

Soaps and Dispensers

Liquid soaps that will off-set the effects of hard water and can even be used in salt water as well as the standard types are available. There is even a liquid soap that is so mild it can be used for bathing a baby. It will not chap or roughen the skin and will leave the skin in a normal healthy condition.

Many different types of sanitary liquid soap dispensers may be employed in the theatre washrooms. Among these are the Soaparatus tanks and accessories, Latherator valves, pump and treadle systems, available in glass, chrome or nickel. By far the most adaptable for theatre use is the individual pump type.

The pump type dispensers are designed along modern lines with the accent on simplicity and refinement and most new dispensers will hold 50 per cent more liquid soap than the older models. New mounting brackets make the unit simple to clean. The dispenser can be used horizontally for wall mounting or vertically for basin mounting by simply reversing the globe. The time proven simple check valve prevents waste and clogging and makes the entire unit easy to fill and maintain. There are no working parts to wear and the outlet remains in an upright position to prevent possibilities of leakage when not in use.

Most types of this dispenser are chrome finished, highly polished, resistant to rust and stain, and require a minimum of cleaning to maintain their beautiful appearance.

Driers

Another highly coveted installation for sanitizing theatre washrooms is the electric drier to replace paper towels thus eliminating fire hazards, clogged urinals and toilets all at the same time.

Floor and wall models, with adjustable nozzles, are available in various colored porcelain enamel finishes. Among the many advantages of the electric drier are continuous drying service — no interruptions; completely sanitary service — there is nothing to carry contamination from one patron to another; thorough drying — prevents chapped and roughened hands during

STEP NUMBER 2 in the cleaning of toilets includes scrubbing and disinfecting the toilet seat to destroy germs that endanger patron health.



STEP NUMBER 3 should include a thorough washing and disinfecting of the toilet exterior to remove stains and maintain a more sightly appearance.



winter months: removes the necessity of marring tile and marble walls in mounting wall cabinets, and is easy and inexpensive to install.

Furthermore, a National Survey reveals, as a conservative figure, that 2½ paper towels are required for one thorough dry. A carton of 3,750 towels costing $3.00 therefore provides 1500 drys. The same National Survey reveals, as a conservative figure, that electric driers provide 100 thorough drys per k.w.h. of electricity. Fifteen hundred drys then, would consume 15 k.w.h. and average electric current cost is but 3 cents per k.w.h. The result is $3.00 for 1500 paper towel drys and $0.45 for 1500 electric drys.

Many theatre owners and managers have been exceedingly neglectful and passive in relation to the maintaining of proper washroom sanitation and oftimes are even ignorant of unsanitary conditions in their own theatres. A patron, appalled by unsanitary washroom conditions, will rarely complain to the manager because of the intimacy of the complaint. But the same patron will almost certainly spread the news to his or her close friends, resulting in loss of patron good will to the theatre.

Sanitation Service

The importance of sanitary conditions throughout a theatre can never be overestimated. To emphasize this, John and Drew Eberson, one of the most prominent theatre architect firms in the United States, have always regarded as the four most important patron facilities of the modern theatre: "good seats, good sight, good sound and sanitary, luxurious toilet and lounge rooms." Most operators agree with them.

In addition to all the sanitary washroom facilities mentioned before, another very important factor must be taken into consideration.

Except for the very large theatre that boasts of a large and well trained staff, the average theatre janitor is neither a sanitation expert nor a very thorough cleaner. His main concern is to tidy up and clean the obvious in the shortest and easiest number of hours. In his hands, even the best of equipment and disinfectants may be badly used or wasted without accomplishing a sanitary, odorless result. The manager and other staff members cannot be expected to do the toilet room work, with the result that many a theatre has a bad odor condition where the only needed ingredients are regular periodic attention and a basic knowledge of the proper method.

Cleansing Specialists

To remedy this one important missing factor, at least one of the largest manufacturers of sanitary equipment and supplies, the West Disinfecting Company, recently introduced a free service to its customers that merits closer inspection and consideration by theatre men.

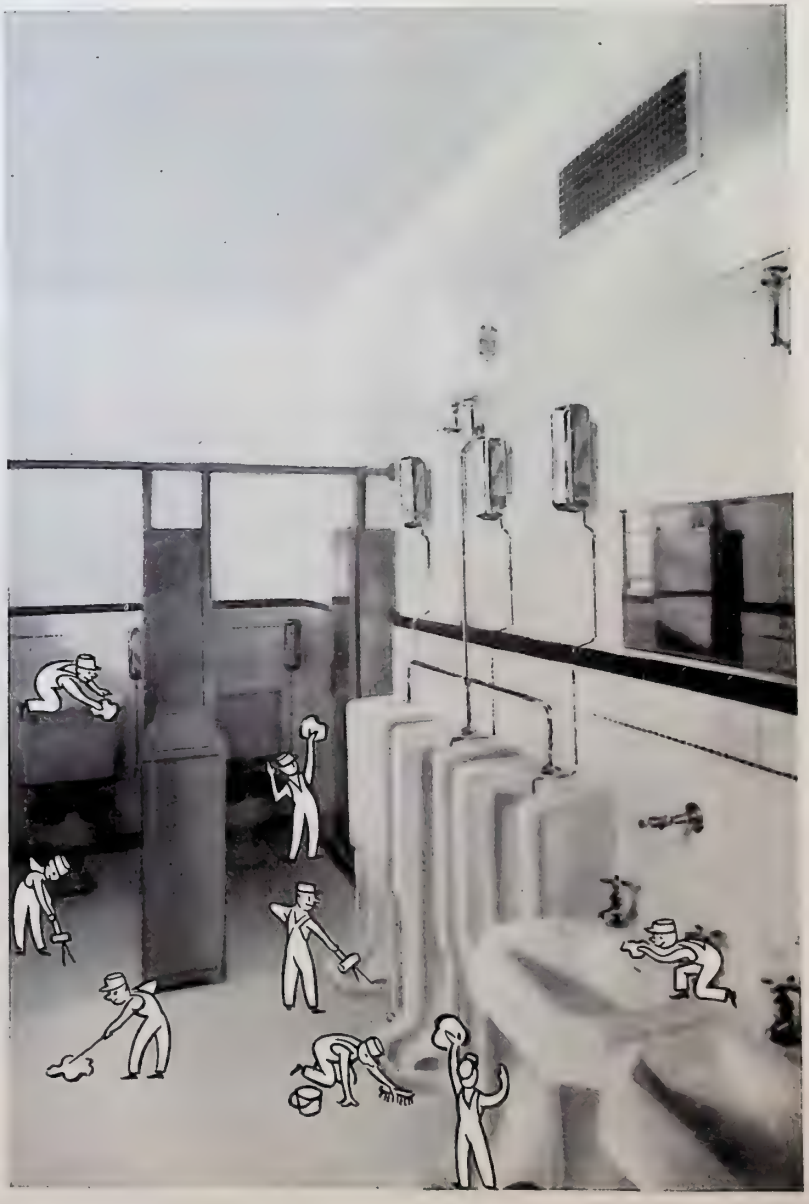
Under this free service, a trained sanitation specialist will call at any particular theatre at regular intervals, as often as once a week, and using highly specialized tools and equipment will give all toilet fixtures or other potential trouble areas a thorough and exact cleaning. During this service visit it is requested that the regular janitor be on hand and receive instruction on the proper daily cleaning and maintenance that must complement the major weekly one. With supervision by management to be certain that the small daily chore is actually done, such a weekly routine should result in perfect conditions in many theatres now plagued by odor and dirt.

Relief from the worry that toilet rooms are earning a theatre an unsavory reputation should be welcomed by most thinking industryites.

Regardless of the method adopted it is the duty of all theatre men to adopt some safeguards and use some reputable cleaning and disinfecting agents, in order to maintain a high industry standard of sanitary excellence.

All Photographs Used in this Survey are through the Courtesy of West Disinfecting Company

WEST DISINFECTING COMPANY makes available a free periodic service to its customers that includes a thorough heavy duty cleaning by West trained personnel. All sanitary installations are given a complete deodorizing, cleansing, and disinfecting to insure patron health and good-will. Few managers and owners realize the importance of an extensive regular cleaning program which can accomplish much.



ALTEC SERVICE *gives an exhibitor*

greater safety — greater value — greater satisfaction

1. NATIONAL ORGANIZATION

The Altec organization, being nation-wide, can organize the distribution of manpower so that your theatre is protected every day. More than 200 Altec inspectors are scheduled to give complete coverage to every Altec Service theatre.

2. NO EQUIPMENT TO SELL

Altec Service is exclusively a service organization. We are in business for one purpose only—to provide sound service so complete and technically advanced that your sound system will operate at its peak performance all of the time. Altec is not a manufacturer of complete sound systems and therefore is unbiased and impartial in any recommendation it makes for the improvement of sound in your theatre. This is of vital importance to you in the face of necessary present-day economies.

3. GOOD SERVICE, PLUS

When you contract for Altec Service you get the regular services of an Altec-trained specialist. *But you get more.* You get the day-in-day-out services of an entire corps of research and development engineers, who work at Altec headquarters in New York and Hollywood.

Science never stands still. At all times, new inventions, new techniques, new modifications of existing techniques, are being developed, to improve both recording and reproduction of sound motion pictures.

All of these new developments are under constant study by the Altec research engineers.

4. TECHNICAL INFORMATION AND ADVICE AVAILABLE

Your Altec inspector gets weekly bulletins from headquarters announcing each new development that affects your theatre. Where you can take advantage of the improved box office value of improved sound your Altec inspector will advise you.

The Altec research and development engineers work closely with the engineers of the Academy of Arts and Sciences, and with the Society of Motion Picture Engineers (SMPE). These organizations are working constantly toward the improvement of standards of sound reproduction as they affect theatres, new testing techniques, new measurement methods for the scientific analysis of theatre problems and their solution. The Altec headquarters engineering staff immediately relays to your Altec Service inspector these findings, the new methods, the new testing techniques.

5. CLOSE COOPERATION WITH EQUIPMENT MANUFACTURERS

Protects the Commercial Application of New Techniques in Equipment Design.

The Altec research and development engineers work closely with the development engineers of the manufacturers of sound systems, to bring to the manufacturer the benefit of nation-wide service experience with theatre sound problems. They, in turn, advise Altec of any new improvements.

6. ALTEC-DESIGNED TEST EQUIPMENT FOR THEATRE USE

The Altec Service research and development engineers have developed and are constantly improving test films, and test equipment, etc., which are an essential part of the kit which the Altec inspector carries with him when he comes to your theatre. These essential test meters, films, measurement apparatus, and tools—so vital in the servicing of your theatre—are scientific equipment, much of which is exclusive with Altec Service.

7. ALTEC REPAIR AND REPLACEMENT AGREEMENT

You can budget your maintenance cost for sound and projection equipment at a minimum weekly charge by means of an Altec Service and Parts Agreement. Altec Service maintains warehouses and stock points in all parts of the country, and in each of these stock points a constantly replenished back-log of all parts that are most and frequently needed in the booth of your theatre is maintained.

The parts stocked in the 36 Altec stock points are all pretested for optimum performance, and are "life-tested". These important life-tests are made in Altec Service testing laboratories; all parts, chosen impartially from the products of all manufacturers on the basis of efficiency only, are thus constantly being improved by continuous Altec laboratory testing.

With the cost of parts constantly rising you can effect a saving by budgeting your costs now.

8. CONSTANT SUPERVISION INSURES THE BEST IN SERVICE

The headquarters engineering staff of Altec Service receives from each of its inspectors, after every call he makes, a complete, technical report. This insures a constant headquarters supervision of the efficiency of the Altec inspector who visits your theatre. His reports are analyzed by the Research and Development engineers; facts discovered in improving sound in one theatre are immediately applied to all Altec-serviced theatres. All technically useful information is immediately relayed to every Altec inspector. Your theatre benefits by this continuous supervisory process by the Altec research engineers, and a constant check is made to see that the service function of your Altec inspector is always at its best.

DIVISION AND BRANCH OFFICES

Activities of Altec Service are directed from four division offices, located in New York, Cincinnati, Chicago, and Los Angeles, as well as from branch offices and stock points in Philadelphia, Pa.; Atlanta, Ga.; Charlotte, N. C.; Memphis, Tenn.; Miami, Fla.; New Orleans, La.; Boston, Mass.; Hamden, Conn.; Kansas City, Mo.; Detroit, Mich.; Minneapolis, Minn.; St. Louis, Mo.; Pittsburgh, Penna.; Cleveland, Ohio; Dallas and Houston, Texas; Fresno, Calif.; Phoenix, Ariz.; San Francisco, Calif.; Tucson, Ariz.; Salt Lake City, Utah; Billings, Mont.; Denver, Colo.; Seattle, Wash.; Portland, Oregon; Brooklyn, N. Y.; Buffalo, N. Y.; Newark, N. J.; Baltimore, Md.; S. Norfolk, Va.; and Washington, D. C.

Inquiries addressed to the home office, 161 Sixth Avenue, New York 13, N. Y., or to the nearest division or branch office, will bring full details about Altec Service without obligation.

ALTEC
SERVICE CORPORATION
161 Sixth Avenue
New York 13, N. Y.

THE SERVICE ORGANIZATION OF THE MOTION PICTURE INDUSTRY

The RCA Service Contract . . .



Costs only a few admissions a day

RCA SERVICE COMPANY, Inc.
A RADIO CORPORATION OF AMERICA SUBSIDIARY
CAMDEN, NEW JERSEY

District Offices

NEW ENGLAND
RCA Service Company, Inc.
820 Metropolitan Theatre Building
260 Tremont St., Boston 16, Mass.

EASTERN
RCA Service Company, Inc.
144-146 E. 24th Street
New York 10, N. Y.

RCA Service Company, Inc.
City Centre Building, Room 304
Philadelphia 7, Pa.

SOUTHEAST
RCA Service Company, Inc.
501-6 Citizens & Southern Bank Bldg.
Atlanta 3, Ga.

MIDEAST
RCA Service Company, Inc.
Room 1105 Law & Finance Building
429 Fourth Ave., Pittsburgh 19, Pa.

RCA Service Company, Inc.
710-712 Keith Building
1621 Euclid Ave., Cleveland 15, O.

CENTRAL
RCA Service Company, Inc.
666 No. Lake Shore Drive
Chicago 11, Illinois

SOUTHWEST
RCA Service Company, Inc.
1907-11 McKinney Avenue
Dallas 1, Texas

MIDWEST
RCA Service Company, Inc.
221 W. 18th Street
Kansas City 8, Missouri

WESTERN
RCA Service Company, Inc.
1560 North Vine Street
Hollywood 28, Calif.

RCA Service Company, Inc.
923A Furniture Mart Building
1355 Market Street
San Francisco 3, Calif.



WHEREVER APPEARANCE AND NEATNESS *Count!*

LINTEX PAPER COLLARS AND FRONTS are always in evidence. Progressive Chains and Independents throughout the country have found that Lintex Paper Collars and Fronts are convenient and economical.

These collars and fronts are made from specially processed paper with a linen finish. When soiled they are thrown away. No laundry problems with Lintex.

Made in wing or turn-down styles, fronts in plain or P.K.







Photo Courtesy
RADIO CITY MUSIC HALL
NEW YORK CITY, N.Y.

REVERSIBLE COLLAR CO.

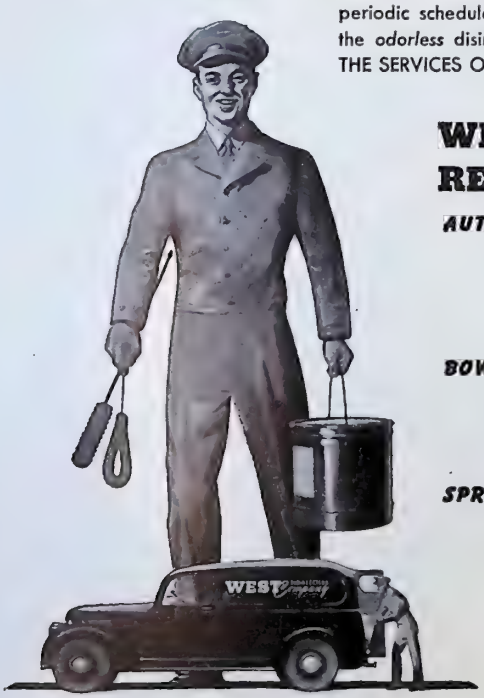
111 PUTNAM AVENUE **CAMBRIDGE, MASS.**

PROPER WASHROOM SANITATION

The West Disinfecting Company occupies a singular position in its field, since it offers such a complete line of products and services for the promotion of washroom sanitation and personal cleanliness and has been a leader in the promotion of public health for over half a century.

THE WEST WAY IS THE BEST WAY
A WASHROOM MAINTENANCE SERVICE

To supplement the regular duties of your janitors, *specially trained West Service Men,* experienced in using proper disinfecting and deodorizing materials in the most efficient manner service your washrooms on a regular periodic schedule. The cost is surprisingly low. Your purchase of Westamine, the *odorless* disinfectant, West Bowl Cleaner and West Deodorants INCLUDES THE SERVICES OF WEST SERVICE MEN WITHOUT ADDITIONAL CHARGE!



WEST'S TRAINED SERVICE MEN REGULARLY TAKE CARE OF . . .

AUTOMATIC DEODORIZATION

The West Automatic Drip Machine is designed to meet a need of proper washroom deodorization in a simple, economical and efficient method. When placed above toilets and urinals, an aromatic liquid constantly drops into the bowl, tending to overcome washroom odors at the source. This machine also deodorizes the air of the entire washroom. West Service Men inspect and refill these automatic devices as required.

BOWL CLEANING

Even over a comparatively short period of time, traps of toilet bowls and urinals collect certain salt and sugar secretions, causing offensive odors and unpleasant conditions. West has developed a special material which West Service Men use to perform the necessary job of heavy duty cleaning.

SPRAYING WITH WESTAMINE ODORLESS DISINFECTANT

WESTAMINE is an odorless disinfectant used by West Service Men, especially designed for the routine spraying, cleaning and scrubbing of washrooms. It is especially prepared to fulfill the demand for a spray fluid of definite bacteriological strength without an odor.



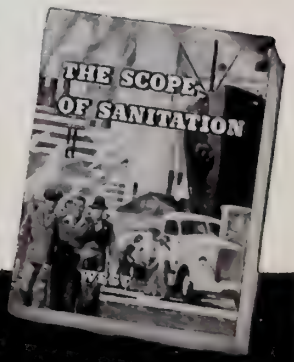
LIQUID SOAPS — Made of pure vegetable oils, treated, aged and laboratory tested. Small quantities suffice to wash and cleanse thoroughly without irritating or drying skin. West manufactures a liquid soap for every requirement.

DISPENSERS — West's standard of merit and attractiveness of design are evident in individual dispensers of all types, including Tilting, Pump valve, or Basin Types. West also installs SOAPARATUS SYSTEMS whereby one tank may serve one or two valves in small washrooms or a battery of 50 basins in larger washrooms.

PAPER TOWELS — Manufactured in West's own paper mill. Laboratory tested for absorbency and strength without sacrificing the "good feeling" that the user has a right to expect.

KOTEX VENDING CABINETS ***(Coin Operated)*** — Exclusively distributed by West.

This 64-page illustrated catalog will supply the answer to your daily cleaning problems.



Branches in Principal Cities of the United States and Canada

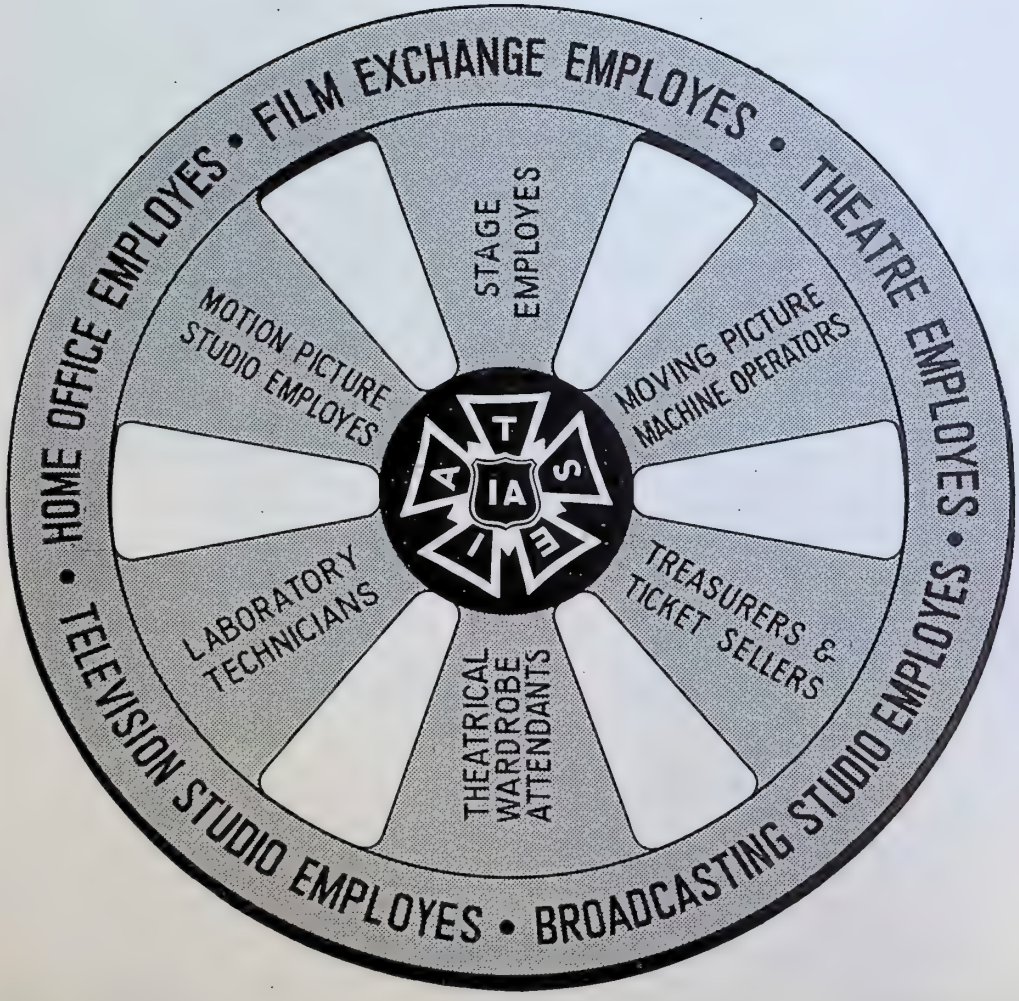
WEST DISINFECTING *Company*

42-16 WEST ST. • LONG ISLAND CITY 1 • N. Y. • DEPT. BS

Write for FREE CATALOG

International Alliance of Theatrical Stage Employes and Moving Picture Machine Operators of the United States and Canada

Affiliated with the American Federation of Labor



RICHARD F. WALSH
International President

WILLIAM P. RAOUL
General Secretary - Treasurer

Suite 803, International Building
630 Fifth Avenue
New York 20, N. Y.

EXTRA PROFITS

1948-49

Theatre Problems in Confection Vending

A Survey of Conditions As They Exist in 1949, and of the Possibilities for Development in the Future

Here is explored the vital question of just how far a theatre may go in the exploitation of its confection vending without alienating patronage. Also the advantages in having all extra profits facilities serviced by a qualified concessionaire or by theatre management. In addition, some suggestions for boosting the sales of confections through the indirect appeal of cleanliness and availability, are outlined. While extra profits from the sales of refreshments are lauded as legitimate and, when properly managed, an important element in the modern theatre's financial stability, it is concluded that the show on the screen is always the theatre's primary business.

Not long ago, at a meeting of grocery wholesalers, one of the speakers predicted that the general store was on its way back, not solely in the towns and villages but in the large cities of the country.

He made the point that large markets and food centers had come to the conclusion that since people came in great numbers to buy groceries, meats, and vegetables, there was no reason why allied lines such as drugs, electrical appliances, etc., couldn't be sold at the same time. This, naturally, would lead to the point where, like the general store of old, customers could do most of their shopping at one place at one time.

Chances are that if this speaker's theory were placed before a meeting of theatremen, many would be in accord, for within the ranks of the nation's exhibitors there are those who think that "if there is a profit to be made, let's make it."

They point to a declining market for films, without the price of pictures to the exhibitors going down, and that if theatremen are going to stay in business for profit, it is perfectly logical that they expand their off-the-screen selling if it does not interfere with the reason why they are in business, selling entertainment.

Of course, the argument here is as to where the line should be drawn. Currently, there are two schools of thought. One advocates a "remove-the-seats-to-make - way - for - the - confection - department" policy while the other adheres to the age-old tradition, that this is show business, and that when we stop selling entertainment we won't be in business regardless of what profit a confection department makes.

Naturally, there is much to be said for both sides.

What has caused the "new look" in as far as an attitude toward confection vending is concerned in recent years is the reported profits of many of the larger circuits, whose grosses run well into the millions, and although no figures are ever revealed, the profits must run parallel to the volume.

Naturally, with this kind of an eye opener, no wonder that off-the-screen selling has made such rapid progress. Extra profits of this nature can't be overlooked by anyone, even the diehards who used to say that "I'll never sell popcorn or candy."

When a new house is built, of course, provision is generally made for an extra profits department that can take care of the patrons, based on the nature of the operating policy and the flow of patron traffic. In such cases, there is never any question of having to eliminate seats to get the most out of the confections.

In the older theatres, however, the problem does arise, and many an exhibitor has been faced with the problem of removing seats to make his stand more eye appealing and attractive. However, the same theatreman has to answer this question: "What will my patrons think if I have a capacity house and they might now be sitting where the stand is?" There are many theatre executives who declare that seats should only be eliminated as a last resort, pointing to the fact that whether a stand is attractive or not, a standing patron has a long memory. Circuits and independents who have eliminated seats can probably point to a greater income, but they have no way of knowing whether they have lost business because of loss of good will.

There is another problem which has to be faced by theatremen who seek to get the most out of their extra profits activities, and that is whether they should operate the department themselves or whether they should be served by a concessionaire or similar service.

Here again is one of those "there-is-much-to-be-said - for - both - sides" questions.

The concessionaire offers arguments quickly.

One prominent concessionaire executive recently had this to say before a group of exhibitors:

"The objectives for which we are reaching are: 1. To produce increased revenue to the company from this important department of our theatre operations. 2. To render a service to your patrons that will help them to better enjoy their visit to our theatre. 3. To so

THE "CONSOLE" of the new Movie-Hour popcorn fountain being distributed by National Theatre Supply stores has been specially designed for theatre or similar mass retail sales. Only counter high with a rather flat pot and large warmer area, bins are provided for raw corn, salt, boxes, and preheated seasoning oil. Two cash drawers help speed sales should two attendants be needed at rush hours.



conduct our concessions as to earn the respect and good will of your patrons.

"The concession bar is not a racket or an appendix to your theatres. It is as much a part of your theatres as the dining car service is a part of the railroad, whose primary function is transportation. By conducting our concession bar upon a high plane of efficiency and service, we do as much to help the theatre patron enjoy his visit to your theatres as the railroads do to help the passengers enjoy the use of their transportation facilities.

"The concession bar offers each manager an opportunity to run his house in a hospitable, charming, and inviting manner.

"In each divison of merchandise, we will handle only the finest quality of products. We have a rigid standard of quality. The complete facilities of our organization are at your disposal. We are responsible for keeping your theatres well supplied with the necessary merchandise, and we will take regular inventories and make inspections of our equipment. The rest is entirely up to you.

"We know from experience that where the concession bar is well operated, where the service to the patron is interested, attentive, courteous, and wholesome, we are able to produce a volume of business which is equal to 10 cents per patron. In other words, if your weekly attendance is 4,000, our sales at the concession bar should be $400. If your attendance is 8,000, our sales at the concession bar should be $800, and so forth.

"Some managers who have learned the technique of proper merchandising have been able to increase their sales to as high as 12 cents and 13 cents per patron. On the other hand, when the concession bars are neglected by the managers, and permitted to run by themselves, sales have fallen as low as six cents per patron. The results at each theatre are dependent almost entirely upon the talent, ability, and interest that the manager takes in its operation.

"Because of superior concessions management, we are able to produce increased grosses, reduce personnel costs, eliminate inventory losses, step up best-selling turnover, guarantee uninterrupted service, furnish daily certified accounting, embrace patron good will through better enjoyment of the show, provide especially designed installations most effective for your theatre, carry the whole investment, and result in more actual net profit every time."

On the other hand, the best argument for ownership management of the extra profits department naturally rests with more profit. If a circuit is large enough, the proponents of this type of thinking declare there is no need for the concessionaire, and all of his functions can be duplicated by the circuit's own large organization.

The fact that some large circuits continue to use the concessionaire services while others have created their own organization would seem to indicate that there is much to be said for both sides, and furthermore, the conclusion must be drawn that theatres served by conces-





CONFECTION STANDS designed for the particular needs of patronage of the nation's theatres have sprung up like wild-fire from coast to coast and usually reflect modern merchandising techniques. A rounded counter with clear plastic shelves and colorful cut-outs sets off the modern stand and tidy miss who serve the patrons of the Palace, Tampa, Florida. A wide range of candy including boxed goods bolster the profitable popcorn. Below, a counter-high DRINCOLATOR soda dispensing unit is countersunk into a stainless steel and plexiglass stand at the Wareham, Manhattan, Kansas. At the Tower, Atlanta, Georgia, good use has been made of star stills and photo murals combined with knotty pine planking to create the "Show-De Bar" which is a fully equipped luncheonette complete with stools and menu.



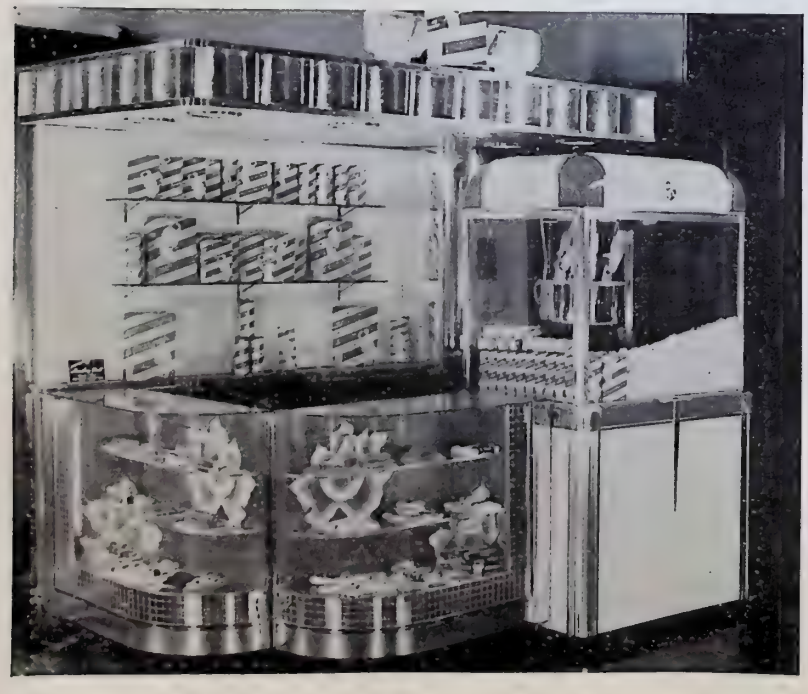
BERLO VENDING COMPANY, a unit of A.B.C. Vending's national concession operating service, has constructed very effective merchandising units such as in the Mastbaum, Philadelphia, Pennsylvania.

sionaires must also be well aware of the profits being made by the circuits which operate their own departments, and still feel they are better off to stick with the concessionaire.

All will agree, however, that there is no standard set of rules for an extra profits department to serve all houses.

The type of stand, kind of merchandise to be sold, and location of the department, all depend upon each individual house, and a proper study must be made to determine how to get the last ounce of profit out of each operation.

MANLEY'S "ADAPTI-BILT" stand comes in several effective units which can be moved or placed in order to create the most dramatic or serviceable result. Many small theatres can greatly benefit by them.



All will agree, also, that unless the attendants of the departments have a proper understanding of their jobs, the whole operation will be so handicapped that no one will be satisfied, the theatre owner, concessionaire, or the patron.

Many circuits have regular bulletins which they distribute to employees to give them sales hints. For example, one contained this type of information:

"Place your slow sellers on top of your counter, in neat stacks in front, and in boxes on ends and rear of top, and see that boxes are kept filled. Changing position of items weekly will give variety and quicken sales.

"Your candy counter is the buy-focal point of the theatre, and should beckon invitingly to prospective patrons. It should be eye-attractive constantly.

"Repeat business, customer gratitude, and good will must be encouraged by gracious, helpful, speedy, and accurate service.

"Use seasonal colors to influence people to make repeat purchases.

"You can sell more candy if your counters are plentifully stocked."

Another bulletin emphasizes managers taking a merchandising inventory as follows:

"Have I followed a constant training program assuring the maintenance of interest by each employee?

"Have I insisted on the cultivation of the kiddie market?

"Have I rotated merchandise insuring fresh stock on sales?

"Have I established the good will, respect, and confidence of my patrons?

"Have I kept the counter, popcorn machine, and drink dispenser clean, inviting, and attractive?

"Have I realized that those who work for me contribute more to my success than the building I'm in or the merchandise I sell?"

With grosses declining, overhead going up, and nothing in the national economic picture to indicate that the easy money days will return in a hurry, the motion picture industry in general can only look forward to a period in which its profits will be going down.

With that sort of outlook, no exhibitor is in a position to ignore any possible means of legitimate profit. While most will not side with anyone who has the "general store" point of view, the fact remains that either through direct operation or through the use of the services of a concessionaire each theatre should try to make the most of its extra profits opportunity.

What the confection department has to offer is directly allied with the operation of a theatre. Patrons come to expect that a theatre will sell candy, popcorn, drinks, and allied lines. They come prepared to buy it.

Subject to sensible rules of operation, and handled by a well-trained staff, each theatre's extra profits division can be made as much an important part of the house's reason for being as does the picture on the screen.

But, in all of this, it should never be forgotten that the primary business of the theatre is entertainment.

An Independent Circuit's Extra Profits Set-Up

The Management Methods and Systems Which the Large Walter Reade Circuit Found Necessary to a Big Job

When a large theatre circuit embarks on the business of self-serving its own confection stands, it actually starts a new business with all of the needs for knowledge, policy decisions, systems and hard work, that are attendant to a new business. And the abilities of the men selected to direct all activities is of major importance. To give all of the service, have all of the facilities, accumulate the buying power, and operate as errorlessly as a large concessionaire was the objective of the Walter Reade Circuit, — and here is what they did about it.

While there are many industryites who are still of the belief that the success or failure of a theatre depends on whether the pictures are consistently good or not, there is one hard and fast rule that applies to the operation of the confection department—study the theatre, and operate the department according to the individual needs of the house.

As a result, this was the crux of the problem which arose when the Walter Reade Theatres, one of the east's largest independent circuits with more than 40 houses in New York and New Jersey, decided to form its own extra profits department.

In June, 1947, the plans became an actuality. It was decided to sell candy, popcorn, Coca-Cola, and novelties, and LeRoy Blumenhein, a manager in one of the cities in which the circuit operates, was selected to head the unit so that his expert knowledge of theatre management could be utilized. It was up to Blumenhein to see that the stands in the various houses were staffed and operated completely by their own employees, with each manager being responsible for the operation in his own theatre, its inventories, merchandising, etc., for which he received a percentage of the gross receipts.

The plan was to have stands in every Reade house, and although all of them were not so equipped at the start, when the schedule was completed each one was fully equipped.

The Reade system calls for the stands to be designed for the individual needs of each theatre, and the sale of items follows the same principle, the product varying according to the theatre and clientele. Thus, while all sell candy, some sell popcorn and some do not. And while some sell Coca-Cola, others do not.

According to figures made available by the circuit, candy represents approximately 57 per cent of the total gross. Popcorn accounts for about 25 per cent, and Coca-Cola for 7.7 per cent. Nuts hit about 2.6 per cent and cigarettes reach about 7.2 per cent. In addition, some stands sell novelties and packaged candy; but these are the exceptions.

Plans for training the attendants were immediately put into effect, and uniforms were provided. The circuit believes that this not only helps in selling the candy, etc., but it also gives a lift to the employees' morale. The training system is fundamental, but it has been successful enough to vindicate the belief that it does result in greater sales.

After many discussions, it was also decided that some sort of standardization was necessary in the matter of names for the department. As a result, all confection stands in the Reade Circuit are now known as "The Refreshery."

The same title was given to the major addition to the confection department's activities when the circuit's first drive-in in Woodbridge, N. J., opened on Labor Day, 1948. Housed in a building in the center of the drive-in, this unit not only sells popcorn, candy, and soft drinks, but also frankfurters, hamburgers, french fried potatoes, coffee, and ice cream. Employees also merchandise foodstuffs by small carts and trays directly to the cars.

All purchasing and all operators are under the direction of Blumenhein and the confection department.

All stands are custom made, put together by local help to meet the needs of the individual house.

Stockrooms are kept clean, dry, and orderly, thus facilitating weekly inventories, and making much easier the keeping of accounts. Because of this, the need for "S.O.S.'s" for new stock are few and far between.

While the machines that are used are kept clean by attendants, needs for major repairs or servicing are taken care of by the Blumenhein staff.

Summing up, it becomes apparent that the operation of the department must be on a sound, efficient basis. This policy, backed by a plentiful supply of stock is the first element of success.

Mr. Blumenhein has a big job, for it's a lot of work to run a business of this magnitude.

THE DECISION to operate is made. Walter Reade, Jr., behind desk; LeRoy Blumenhein, former city manager who now heads the confections department; and Edwin Gage, general manager, begin blue-printing the myriad details which included that Coke, candy, nuts, and popcorn would be the staples and that the enterprise will need a name. It was months before "The Refreshery" was selected as a title.



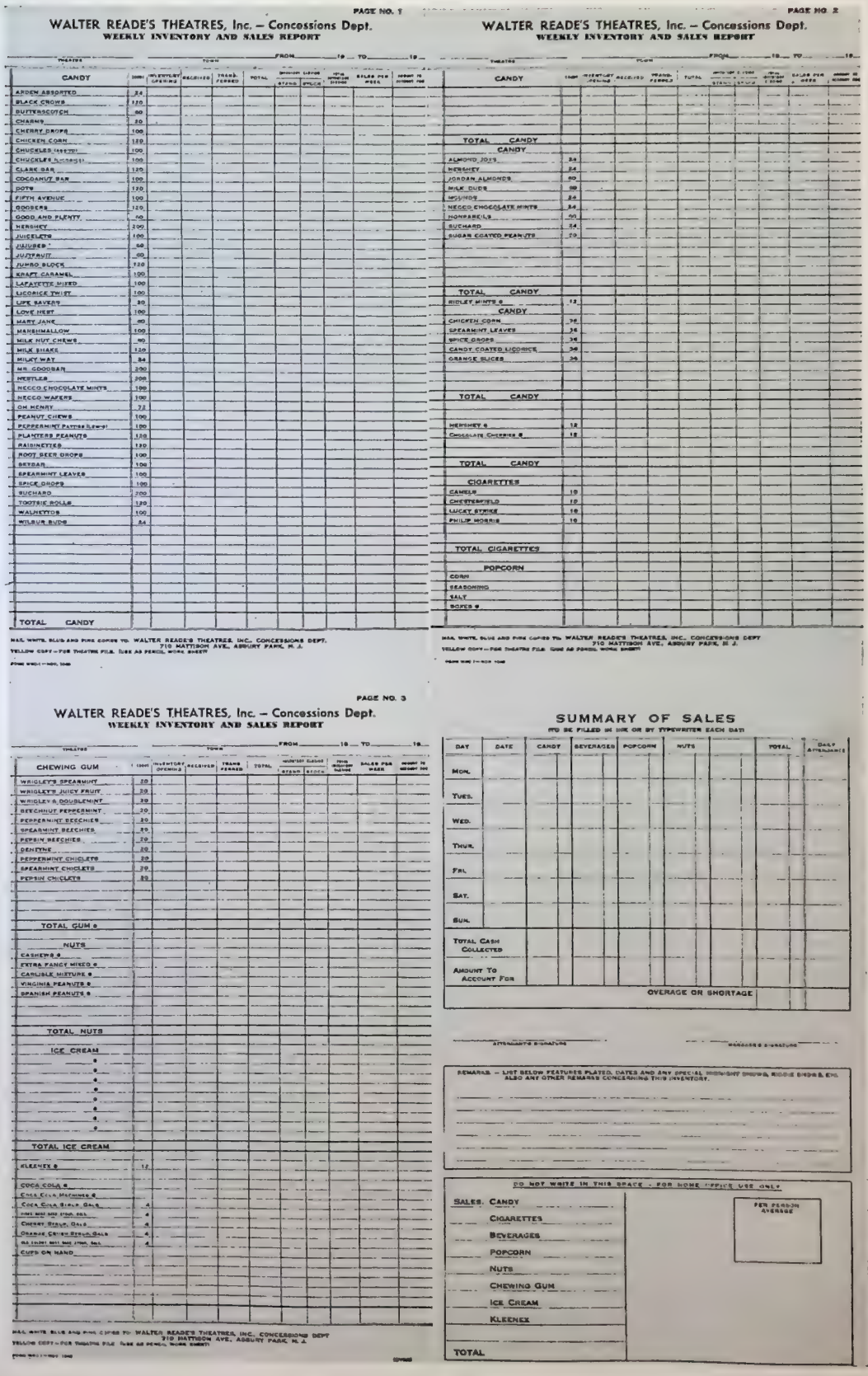




SELECTION of products and brands took several weeks. Gage and Blumenhein, above left, pick Coca Cola as the soft drink. A decision that cigarettes would be sold brought up match covers. At the right, Blumenhein and Gage check over designs with a match company representative. Bookkeeping and analysis of figures is an integral part of "The Refreshery" operation. Below right, confection stands are made to order in local carpentry shops.







PAGE NO. 1

WALTER READE'S THEATRES, Inc. – Concessions Dept.
WEEKLY INVENTORY AND SALES REPORT

THEATRE _____ TOWN _____ FROM _____ 19__ TO _____ 19__

CANDY	10¢	INVENTORY OPENING	RECEIVED	TRANS-FERRED	TOTAL	INVENTORY CLOSING STAND	INVENTORY CLOSING STOCK	SOLD OVER 1 WEEK OLD	SALES PER WEEK	AMOUNT TO ACCOUNT FOR
ARDEN ASSORTED	24									
BLACK CROWS	120									
BUTTERSCOTCH	80									
CHARMS	80									
CHERRY DROPS	100									
CHICKEN CORN	120									
CHUCKLES (ASSORTED)	100									
CHUCKLES (ORANGE)	100									
CLARK BAR	120									
COCOANUT BAR	100									
DOTS	120									
FIFTH AVENUE	100									
GOOBERS	120									
GOOD AND PLENTY	60									
HERSHEY	200									
JUICELETS	100									
JUJUBES	60									
JUJYFRUIT	60									
JUMBO BLOCK	120									
KRAFT CARAMEL	100									
LAFAYETTE MIXED	100									
LICORICE TWIST	100									
LIFE SAVERS	30									
LOVE NEST	100									
MARY JANE	60									
MARSHMALLOW	100									
MILK NUT CHEWS	80									
MILK SHAKE	120									
MILKY WAY	24									
MR. GOODBAR	200									
MUSTLER	208									
NECCO CHOCOLATE MINTS	108									
NECCO WAFERS	100									
OH HENRY	72									
PEANUT CHEWS	100									
PEPPERMINT Patties (Bag-o)	100									
PLANTERS PEANUTS	120									
RAISINETTES	120									
ROOT BEER DROPS	100									
SKYBAR	100									
SPEARMINT LEAVES	100									
SPICE DROPS	100									
SUCHARD	200									
TOOTSIE ROLLS	120									
WALNETTOS	100									
WILBUR BUDS	24									
TOTAL CANDY										

MAIL WHITE, BLUE AND PINK COPIES TO: WALTER READE'S THEATRES, INC., CONCESSIONS DEPT.
710 MATTISON AVE., ASBURY PARK, N. J.
YELLOW COPY – FOR THEATRE FILE. USE AS PENCIL WORK SHEET

PAGE NO. 2

WALTER READE'S THEATRES, Inc. – Concessions Dept.
WEEKLY INVENTORY AND SALES REPORT

THEATRE _____ TOWN _____ FROM _____ 19__ TO _____ 19__

CANDY	10¢	INVENTORY OPENING	RECEIVED	TRANS-FERRED	TOTAL	SOLD OVER 1 WEEK OLD STAND	SOLD OVER 1 WEEK OLD STOCK	SALES PER WEEK	AMOUNT TO ACCOUNT FOR
TOTAL CANDY									
CANDY									
ALMOND JOYS	24								
HERSHEY	24								
JORDAN ALMONDS	60								
MILK DUDS	30								
MOUNDS	24								
NECCO CHOCOLATE MINTS	24								
NONPAREILS	60								
SUCHARD	24								
SUGAR COATED PEANUTS	72								
TOTAL CANDY									
RIDLEY MINTS @	12								
CANDY									
CHICKEN CORN	36								
SPEARMINT LEAVES	36								
SPICE DROPS	36								
CANDY COATED LICORICE	36								
ORANGE SLICES	36								
TOTAL CANDY									
HERSHEY @	12								
CHOCOLATE CHERRIES @	12								
TOTAL CANDY									
CIGARETTES									
CAMELS	10								
CHESTERFIELD	10								
LUCKY STRIKE	10								
PHILIP MORRIS	10								
TOTAL CIGARETTES									
POPCORN									
CORN									
SEASONING									
SALT									
BOXES @									

MAIL WHITE, BLUE AND PINK COPIES TO: WALTER READE'S THEATRES, INC., CONCESSIONS DEPT.
710 MATTISON AVE., ASBURY PARK, N. J.
YELLOW COPY – FOR THEATRE FILE. USE AS PENCIL WORK SHEET

PAGE NO. 3

WALTER READE'S THEATRES, Inc. – Concessions Dept.
WEEKLY INVENTORY AND SALES REPORT

THEATRE _____ TOWN _____ FROM _____ 19__ TO _____ 19__

CHEWING GUM	1 CENT	INVENTORY OPENING	RECEIVED	TRANS-FERRED	TOTAL	INVENTORY CLOSING STAND	INVENTORY CLOSING STOCK	SOLD OVER 1 WEEK OLD	SALES PER WEEK	AMOUNT TO ACCOUNT FOR
WRIGLEY'S SPEARMINT	20									
WRIGLEY'S JUICY FRUIT	20									
WRIGLEY'S DOUBLEMINT	20									
BEECHNUT PEPPERMINT	20									
PEPPERMINT BEECHIES	20									
SPEARMINT BEECHIES	20									
PEPPIN BEECHIES	20									
DENTYNE	20									
PEPPERMINT CHICLETS	20									
SPEARMINT CHICLETS	20									
PEPPIN CHICLETS	20									
TOTAL GUM @										
NUTS										
CASHEWS @										
EXTRA FANCY MIXED @										
CARLISLE MIXTURE @										
VIRGINIA PEANUTS @										
SPANISH PEANUTS @										
TOTAL NUTS										
ICE CREAM										
@										
@										
@										
@										
@										
@										
@										
@										
TOTAL ICE CREAM										
KLEENEX @	12									
COCA COLA @										
COCA COLA MACHINES @										
COCA COLA BIG 8 OZ.	4									
[illegible]	4									
CHERRY BERRY 8 OZ.	4									
ORANGE CRUSH BERRY 8 OZ.	4									
[illegible]	4									
CUPS ON HAND										

MAIL WHITE, BLUE AND PINK COPIES TO: WALTER READE'S THEATRES, INC., CONCESSIONS DEPT.
710 MATTISON AVE., ASBURY PARK, N. J.
YELLOW COPY – FOR THEATRE FILE. USE AS PENCIL WORK SHEET

SUMMARY OF SALES

TO BE FILLED IN INK OR BY TYPEWRITER EACH DAY!

DAY	DATE	CANDY	BEVERAGES	POPCORN	NUTS		TOTAL	DAILY ATTENDANCE
MON.								
TUES.								
WED.								
THUR.								
FRI.								
SAT.								
SUN.								
TOTAL CASH COLLECTED								
AMOUNT TO ACCOUNT FOR								
					OVERAGE OR SHORTAGE			

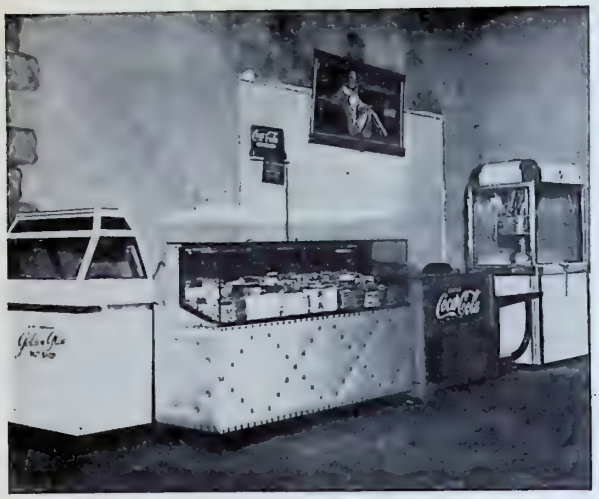
ATTENDANTS SIGNATURE _____ MANAGERS SIGNATURE _____

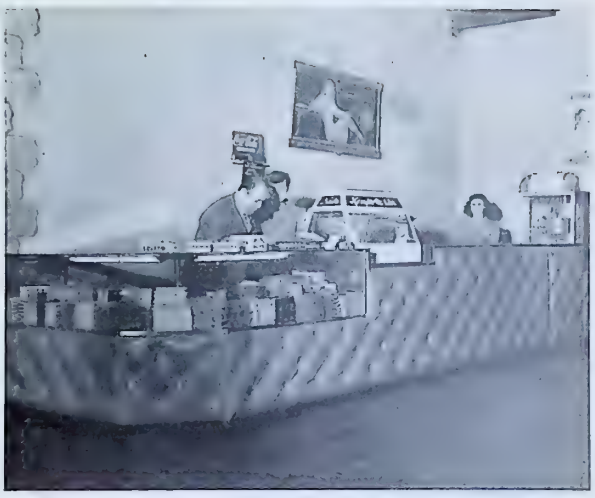
REMARKS – LIST BELOW FEATURES PLAYED, DATES AND ANY SPECIAL MERCHANDISE SHOWN, MOVIE ENDS & ETC. ALSO ANY OTHER REMARKS CONCERNING THIS INVENTORY.

DO NOT WRITE IN THIS SPACE – FOR HOME OFFICE USE ONLY

SALES, CANDY		PER PERSON AVERAGE
CIGARETTES		
BEVERAGES		
POPCORN		
NUTS		
CHEWING GUM		
ICE CREAM		
KLEENEX		
TOTAL		

WEEKLY INVENTORY and sales report charts form an important facet of "The Refreshery." Every type of candy is counted and listed in alphabetical order to insure a comprehensive check. Candies of different prices are kept in a separate position on the forms. Some confections require a complete form of their own. Cigarettes, gum, nuts, ice cream, and soft drinks are separately listed as are the number of paper cups on hand. A daily summary of sales is kept on a special form which requires a listing of each item, total cash collected, amount to be accounted for, and any overage or shortage. The attendants' and managers' signatures are also required. There is a lot of hard work, concentration, and much trial and error before even a semblance of smooth running operation is achieved. This is a big business; but it is not theatre business, and the average owner has a lot to learn. Candy prices have been deleted upon request of the circuit.



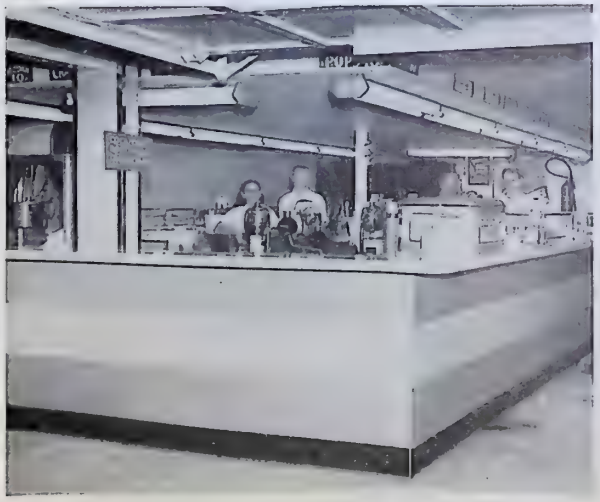


EQUIPMENT for the confection stand was considered to be outmoded in the Paramount, Plainfield, New Jersey, above left, when "The Refreshery" organization went into action. The new installation is shown above right. Clean, dry, orderly stock rooms, where supplies are easily accessible, are a must in operating "The Refresheries." Below left, Julius Daniels, city manager, assisted by an usher, takes inventory in the Majestic, Perth Amboy, New Jersey. Right center, a rush order of candy is brought to the Paramount. Blumenhein uses the station wagon to cover the circuit and has put 19,000 miles on the car in just a few months. Careful inventories and a systematic ordering method has greatly reduced such "S.O.S.'s." Mechanical troubles are a serious consideration. Normal cleaning and care by the attendants will keep most equipment in good shape indefinitely, and minor repairs are usually done by theatre personnel. Major difficulties are delegated to Blumenhein. He is shown inspecting a popcorn machine. "The Refresheries" have been expanded to include drive-ins in the circuit, such as the large confection booth at the Drive-In, Woodbridge, New Jersey.









This theatre made 33⅓% more every week!

HOW WAS IT DONE?



A house in Baltimore thought its candy business was pretty good. Then, they switched from handling their own lobby sales to complete BERLO service.

For the next six months, this theatre's extra profits averaged 33⅓% more per week.

Here's what did it. First, BERLO installed a new candy counter (at BERLO'S expense)—a bright, attractive counter that seemed to say, "Here is quality candy." Then, BERLO rearranged the stock. Slow sellers were quickly tossed out. America's Best Candy—the candies that are favorites right now, not yesterday, were attractively arranged. BERLO'S trained sales girls went to work, under trained supervisors.

Next, the popcorn set-up was converted (at BERLO'S expense) to a modern BERLO warmer with uniformly delicious centrally-popped corn.

Finally, hidden costs were eliminated. BERLO paid the social security, workman's compensation, unemployment taxes and all other expenses . . . including $1,000,000 of public-liability and products-liability insurance.

If you'd like to increase your lobby sales profit, call in the BERLO man today. Offices in principal cities.

A·B·C

A COMPLETE SERVICE

Candy Vending Machines
Popcorn Vending Machines
Candy Stands
Popcorn Warmers
Ice Cream Stands
Complete Lobby Shops

SPECIALIZING IN REFRESHMENT CONCESSIONS FOR

DRIVE-IN THEATRES

BERLO VENDING COMPANY

A DIVISION OF ABC VENDING CORP.

333 S. Broad Street, Philadelphia 6, Pa. Offices and Warehouses in Principal Cities

Cretors
CHICAGO, ILL.

Since 1885

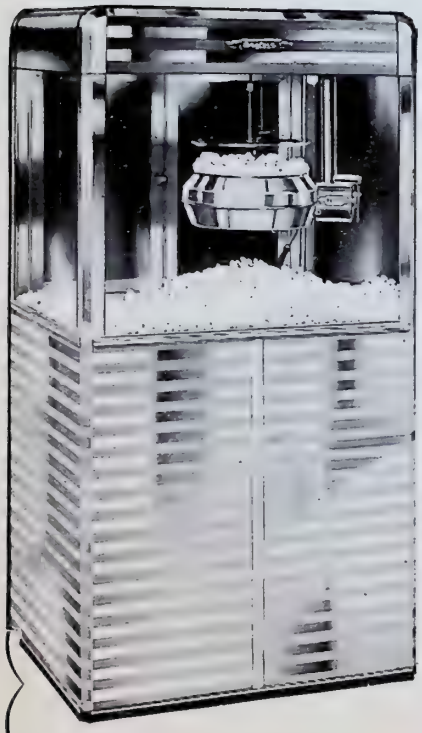


A BIG Name For Over 63 Years



For more than 63 years the CRETORS name has represented the finest corn-popping machines manufactured. It is your assurance of:

- ★ **Speedy and Dependable Operation**
- ★ **Top Quality Product**
- ★ **Maximum Earning Power**



CADET MODEL 51

This low-priced Counter Model, completely finished in beautiful stainless steel is the answer to insufficient space. Small and compact, yet holds an amazingly large amount of popped corn. CRETORS original process popper pops corn direct in the salt and seasoning. Speedy and dependable.
Capacity: $8 to $10 popped corn per hour.



GIANT MODEL 41

Fast, efficient, trouble-free large capacity popper that seasons each and every kernel alike, producing a better flavored corn at less cost. Enclosed transmission. Dump handle interchangeable—right or left hand operation. Heated by manufactured, bottle gas or natural gas. Electric power motor. Gasoline fuel extra.
Capacity: Pops approximately 50 lb. corn per hour.

HOLLYWOOD MODEL 48

Finished in beautiful satin-finish striped stainless steel designed to harmonize with any location. Improved mechanism and modern engineering offer large capacity and speedier, economical operation.

Capacity: One pound raw corn per popping.

★

Also Manufacturers of
DeLuxe Super 60 Model ***Super 60 Combination***
Giant Models 42, 43, 48, 51

C. CRETORS & CO.

620 W. CERMAK RD. CHICAGO 16, ILLINOIS

WHY GUESS?

Be Sure . . . with O.V.T.*

**OFFICIAL VOLUME TESTER*

Standard of the Industry

**Approved and used by Nat'l Assn. of Popcorn Manufacturers and Popcorn Processors Association*



ONLY *Manley* DELIVERS THE "COMPLETE PACKAGE"

1. THE FINEST POPCORN MACHINE
2. THE HIGHEST QUALITY SUPPLIES

Plus 3 A NATIONAL ADVERTISING CAMPAIGN TO INCREASE POPCORN SALES IN YOUR THEATRE . . .

Popcorn is a national habit and you can cash in on it, but... make sure you get Manley's "complete package." Manley Popcorn Machines are dependable, big capacity, and sturdily constructed—but, Manley adds another important feature... EYE APPEAL. Eye Appeal means "extra" profits for the operators of Manley Machines.

Combine a sparkling-bright Manley Popcorn Machine with choice Manley Supplies—the finest popcorn, bigger, fluffier, more delicious, plus Manley's rich, pure, popcorn seasoning, Manley's Popcorn Salt and famous candy striped Bags and Boxes and you'll make amazing profits per hundred pounds of corn popped. But, in addition to all this Manley is building tremendous consumer demand for Manley's Hi Pop Popcorn with 72,240,437 individual advertising messages in national magazines during 1948 and 1949. Mail the coupon below for our new booklet, "How to Make Big Profits From Popcorn."

© 1948 MANLEY INC.

Manley, Inc. GENERAL OFFICES: 1920 Wyandotte Street, Kansas City 8, Missouri

BUREN MFG. CO.

"THE BIGGEST NAME IN POPCORN!"

SALES and SERVICE OFFICES

Atlanta, Ga.	Cleveland, Ohio	Indianapolis, Ind.	New Orleans, La.	Roanoke, Va.
Boston, Mass.	Dallas, Texas	Kansas City, Mo.	New York, N.Y.	St. Louis, Mo.
Buffalo, N.Y.	Denver, Colo.	Los Angeles, Calif.	Oklahoma City, Okla.	Seattle, Wash.
Charlotte, N.C.	Detroit, Mich.	Memphis, Tenn.	Omaha, Nebr.	Toronto, Ontario
Chicago, Ill.	Des Moines, Ia.	Minneapolis, Minn.	Philadelphia, Pa.	Vancouver, B.C.
				Washington, D.C.

MANLEY, INC., DEPT. T C
1920 Wyandotte St.
Kansas City, Mo.

Without obligation please send me a copy of your booklet "How to Make Big Profits From Popcorn."

YOUR NAME.....

BUSINESS NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

GREATER PROFIT ASSURANCE . . . . . with

NATIONAL MOVIE HOUR

Popcorn Fountain



- **POPS MORE CORN!**
- **SERVES MORE PEOPLE!**
- **MAKES MORE MONEY!**

Designed for *SPEEDY, BIG-VOLUME* Operation

- Greater Popping Capacity Than Any Other Machine
- Pops Three Pounds of Corn at a Single Popping
- Counter-Height Cabinet Speeds Sales
- New Type Popping Plate Replaces Kettle
- Better Corn Display . . . Better "buy" Appeal

. . . AND A COMPLETE LINE OF MOVIE HOUR "QUALITY" BRAND POPCORN SUPPLIES!

MOVIE HOUR *Hybrid* POPCORN



"QUALITY SEALED" IN METAL CONTAINERS

Greater Popping Quality
Store It Anywhere
No Rat or Weevil Loss
Easier to Handle

FOUR 10 LB. CANS TO CASE ALSO PACKED IN 100 LB. BAGS

MOVIE HOUR *Liquid* POPCORN SEASONING

It Pours
It Assures Maximum Popping Volume
It Makes Corn More Delicious
It Gives Corn Beautiful Golden Color
It is Not Greasy



SIX ONE GALLON CANS TO CASE

BOXES · BAGS · SALT · SCOOPS

"Everything for your Popcorn Business!"

A UNIT OF NATIONAL STANDARD THEATRE EQUIPMENT

NATIONAL THEATRE SUPPLY
Division of National • Simplex • Bludworth, Inc.

TELEVISION *and* 16 mm. FILM

1948-49

Large Screen Television

An Analysis* of the Advantages and Disadvantages of the Existing Methods With Theatre Application

By RALPH V. LITTLE, JR.
Theatre Television Products Engineer
Radio Corporation of America, Camden, N. J.

In its phenomenal development, television has already reached vast audiences in areas served by television broadcasting stations. Another potentiality of television for entertainment and education is its use in the theatre.

Two basic systems of large screen television are being evaluated through a series of practical tests. One is the direct projection system by which high brilliance kinescope images are projected through an efficient reflective optical system; the other an intermediate film system using standard motion picture projection technique, after television images have been photographed on motion picture film and suitably processed.

Direct Projection

The direct projection television system consists of three major elements; (1) the projection kinescope which is the source of the light image; (2) the optical system which projects the image onto the screen; (3) and the screen from which the final image is viewed. The three elements as shown in Fig. 1, must be designed into a coordinated system to provide the maximum overall efficiency. Let us examine each element of the system in order to understand the problems involved as well as the possibilities and limitations of each element.

Projection Kinescope

The kinescope used in the direct system is similar to the direct viewing tube used in the conventional television receiver; except that projection kinescopes have a much greater light output due to higher voltage operation and for which they are specially designed. We see, in Fig. 2, the diagram of a typical projection kinescope; the electron gun emits a stream of electrons which are focussed by an electron lens controlled by the first anode voltage; then the electrons, accelerated by the high voltage potential, strike to the screen where they cause the phosphor coating of the tube face to emit light in accordance with the density of the electron beam. The controlling element of the tube is the control grid which is fed from the video signal. A deflection yoke surrounds the neck of the tube providing the scanning raster necessary to form a picture image. The phosphor screen is backed with an aluminum coating which increases the tube efficiency by; (a) reflecting the majority of the light produced in the phosphor through the face plate, (b) permits higher current densities without burning screen and (c) allows secondary emission to be carried off rapidly so that sticking or current limiting does not take place.

Since television is not adapted, at the present state of the art, to the use of supplementary light sources as in motion picture practice, the brightness of the image for projection depends upon the efficiency of the kinescope and the operating potentials. An average picture on a projection kinescope will draw a beam current of approximately one milliampere at a potential of eighty kilovolts. This is a power of only eighty watts and with a screen efficiency of five candle power per watt, provides a light output of 400 candle power. Future efforts will be concentrated on the development of tubes capable of handling greater beam currents and operating at higher potentials in an effort to increase the light output.

Optical System

The familiar refractive projection optics used in motion picture film projectors delivers approximately six per cent of the light from the arc light source to the screen, on the other hand the re-

*Paper presented at the National Electronics Conference, Chicago, Illinois, Nov. 5th, 1948.

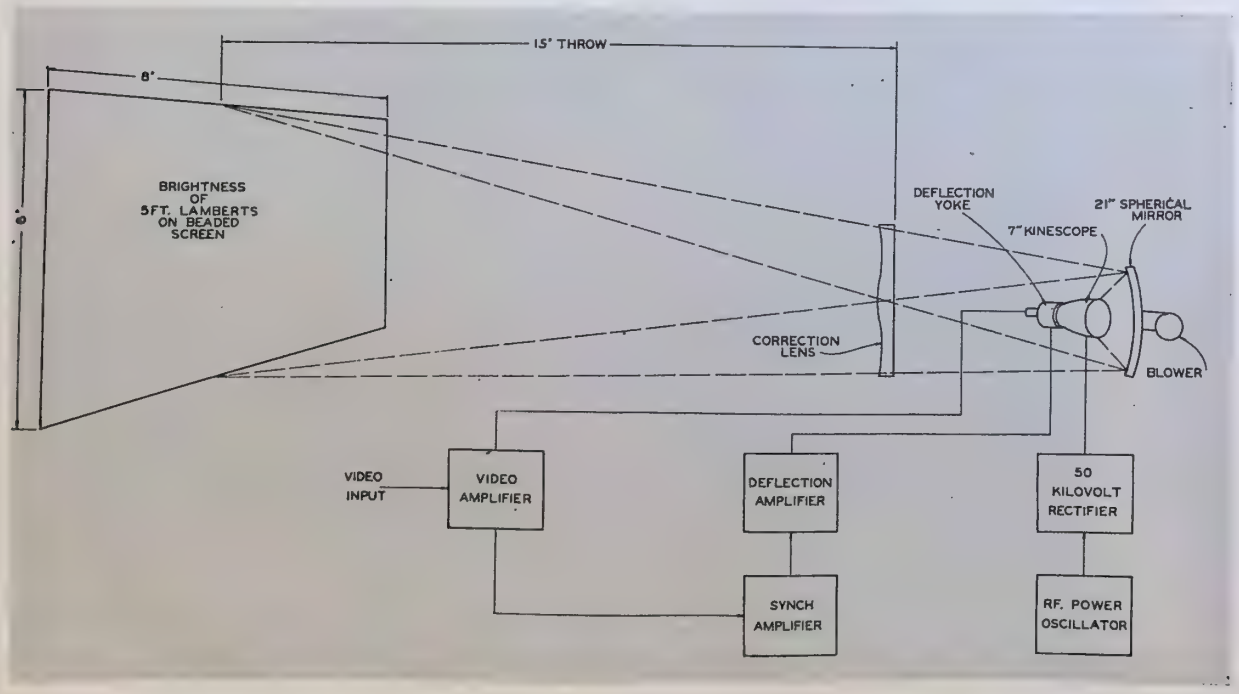


FIGURE NUMBER 1. Simplified diagram of projector using reflective optics.

flective optics developed for television delivers thirty percent of the light output of the kinescope to the screen.

Reflective mirror and aspheric correcting plate are an adaptation of Schmidt optics. The principal feature involved is in a method developed to correct the spherical aberration of the system for finite focus. The elements of the optical system are shown, in Fig. 3, consists of the spherical mirror, the correction lens, and the projection kinescope tube face. The form of the correction lens design can be seen from the figure and by tracing several rays we can see how the "S" curve is evolved. The shape of the correcting lens must be such that all rays emanating from an object point "O" on the tube face and reflected by the mirror, shall meet at the image point "I" located at a distance "S" from the correcting lens. The figure 3 shows three rays emanating from "O" and striking the mirror at different apertures. Without the presence of the correcting lens, rays 1, 2, 3, would intersect the axis at distances Q1, Q2, and Q3 from the center of curvature. The slopes on the correcting lens have to be such that all three rays intersect at I; hence the lens has flat zone where ray 2 passes, a negative slope where ray 1 passes and a positive slope where ray 3 passes. The shape of the lens can thus be determined by tracing a number of rays to evolve the final curve. Such a curve is very difficult to generate and must be made by dividing the glass lens into a number of zones and grinding them progressively and in the final operations blending them into a smooth curve; as you may imagine this is a difficult and costly operation.

The lenses now used in large projection systems are made of plastic, formed in glass moulds by a cold setting process; the results are excellent and lenses as large as twenty (20) inches in diameter can be made by this process.

For optimum design the diameter of the mirror is three times that of the kinescope and the lens twice that of the kinescope. The radius of the mirror is approximately the same as its diameter while the radius of the kinescope tube face is approximately one half that of the mirror. These general criteria are for optimum efficiency of the system, therefore the size of the elements of the system depends on the size of the kinescope, and the characteristic of these designs are one of short focal length giving short projection throw distances.

Reflective optics have been designed for large screen projection for pictures up to 18 x 24 feet; systems for a 7½ x 10 foot screen use a 21 inch mirror, 14 inch lens and a 7 inch 50 kilovolt kinescope. The largest system ever built consisted of a 42 inch mirror, a 26 inch lens, and 12 and 15 inch projection kinescopes operating at 80 kilovolts; the throw was fixed at 40 feet and by changing the kinescope either a 15 x 20 or an 18 x 24 foot picture was shown, the magnification being fixed by the mirror radius. Limited production facilities and the high cost of the 42 inch mirror system indicated the advisability of concentrating on smaller optics and increasing the voltage capabilities of the seven inch

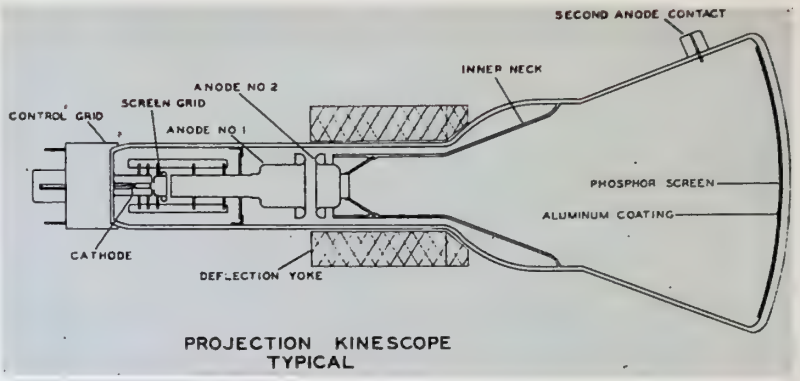


FIGURE NUMBER 2. Functional diagram of typical projection kinescope.

projection kinescope in order to make a compromise system which might be successful commercially.

Viewing Screen

The viewing screen from the third and final element of direct projection television. Standard motion picture screens have a diffuse surface which distributes the light in all directions. A great deal of light is then lost to the ceiling and floor. Directivity therefore in the vertical plane could concentrate the light where it can be most useful and effect an important gain. Beaded screens have been made to increase the light from the screen, but the directivity pattern while showing a gain of two does not restrict the vertical reflective pattern and in addition tends to reflect a great deal of illumination back to the optical system where it reduces the contrast of the images. Developments in directional screens are underway and promise gains as high as three. A lenticular screen of this type was successfully used in the Philadelphia Fox Theatre where an 15 x 20 foot picture was shown featuring the Louis-Walcott fight; this screen is embossed on an aluminized surface, with small convexed lens element to control the directivity pattern. The observed results were excellent and a gain of two and one half times was measured.

Rear Screen

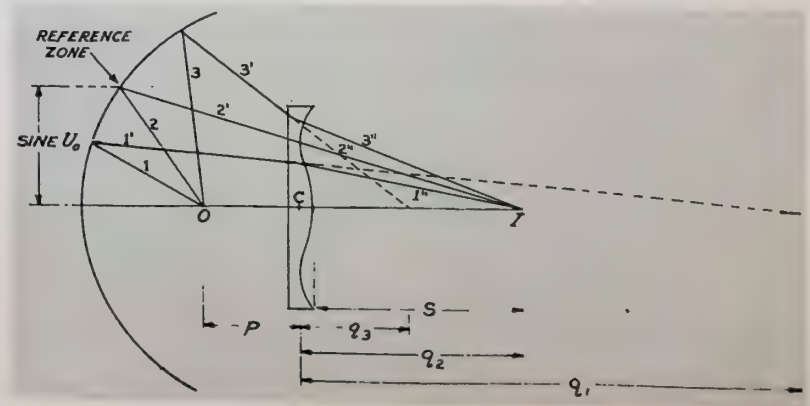
The rear or transmission screen should be reviewed because it may seem to be ideal for large screen applications. Such is not the case with a normal translucent screen because, the light being from a small source, is a diverging cone of light at the screen. The screen will be receiving direct rays normal to the screen in the center and diverging as you go toward the edges; the result a hot spot in the center of the screen.

A field lens can be used on the rear of the screen to bring the rays in a parallel pattern and hence give even illumination over the entire screen or by a modification the pattern may be made to suit the application. The field lens can only be accomplished in small screen such as the home type projection sets where a moulded plastic screen is used. A compromise screen of high density translucent material can be made, but the gain will be low and the directivity pattern becomes very sharp.

Intermediate Film System

The alternate system of large screen television projection, which was referred to earlier as the intermediate film system also consists of three major units. The first is the television recording unit with a high quality television monitor and a special 35mm motion picture camera, the second consists of a high speed

FIGURE NUMBER 3. Layout diagram for reflective lens system.



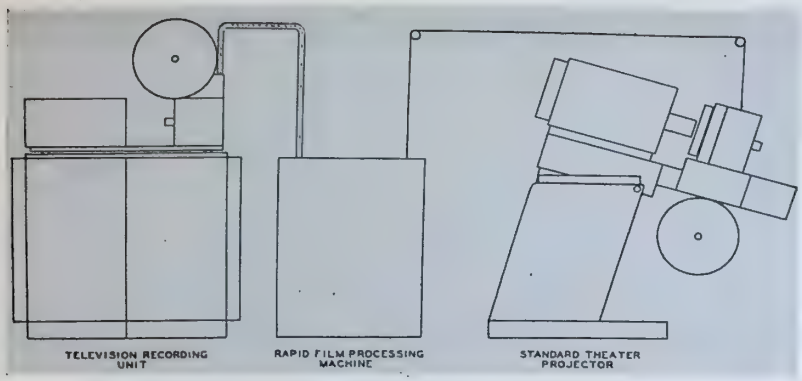


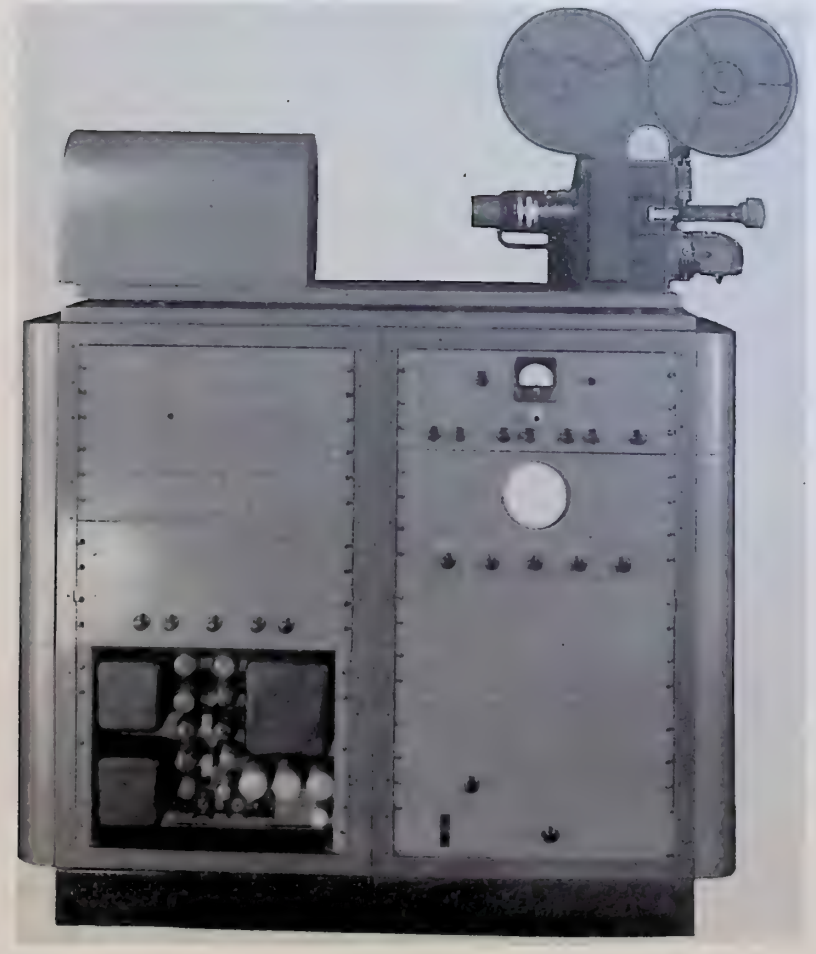
FIGURE NUMBER 4. Functional diagram of intermediate film system.

film processing machine, and third, the conventional 35mm theatre film projector. Shown, in Figure 4, is such a system which can be so integrated that the film runs through the complete cycle at the conventional speed of 90 feet per minute, completing the cycle so that the elapsed time between the image appearing on the kinescope and its projection on the viewing screen is less than one minute.

Television Recording

Let us examine each section individually. In Figure 5 we have the special monitor equipment. This consists of a high quality television receiver using a special 5 inch kinescope having a blue phosphor screen of high actenic value. The tube, a RCA 5WP11, operates at 27 kilovolts and produces blue images of excellent sharpness and contrast. Since the film used is blue sensitive, the average beam current is low ensuring long tube life. A negative television image is used on the kinescope screen in order that the film processing will result in a positive image ready for projection.

FIGURE NUMBER 5. Television recording equipment.



Camera

A special camera had to be devised which would compensate for the timing difference of television at 30 frames per second and motion picture film at 24 frames per second; this camera must also provide for sound on film recording resulting in a single film system.

To illustrate the camera problem refer to Figure 6. The figure is divided into intervals of 1/60 of a second representing the television field frequency. Since the 1/24 second frame rate is 2½ x 1/60, five television fields represent 1/12 second or 2/24 second which is the time interval of two motion picture frames. The problem then is to fit the exposure and the film transport of two film frames into five television fields. If we start to expose the film starting at field "A" and continuing to the end of field "B" we have one exposure of 1/30 of a second, a complete interlaced television frame. We have used two fields of the television picture and two more would be required for a second exposure leaving one field out of five to be used for two film transport intervals. This means that half a field or 1/120 of a second is left for each film pull-down. Following the first exposure we allow for the pull-down interval which brings us to the middle of the next television field and it is here that the exposure must begin and continue for another two fields or 1/30 of a second to complete exposure of another film frame followed by pull-down of the film to start a new cycle. The film transport or pull-down interval of 1/120 of a second is one half that of the normal motion picture camera so the faster pull-down is the first special requirement of the camera.

Exposure Control

A precision shutter is required to give the proper exposure on the film. The exposure in terms of the television system must be accurate to less than one half of a scanning line or one part in 30,000. The rigid requirement arises from the fact that the start and stop of the exposure are brought together and a direct comparison is apparent especially in the alternate frames where the splice occurs in the middle of the television field. The shutter motor is specially damped, and the gear train and the bearings have been given special attention to provide exposures of the desired accuracy. The camera and shutter are driven by synchronous motors; it then follows that precise exposure depends on synchronism with the television system, otherwise, the difference in synchronism will change the exposure making an over or under exposure depending on the under or over synchronous speed of the camera. Improper exposure shows up as a band of when the wrong number of a

television lines are recorded on the film and will be seen as a region where a gap or overlap occurs making a white line for under exposure or a black line when an over exposure occurs.

Electronic Exposure Control

An alternative method of exposure control is available in the form of a method of biasing the kinescope image on and off by an especially generated blanking signal so that exposure is precise. The camera shutter is replaced by an exposure control circuit initiated by a contact on the camera. The contact closes after the film has been transported and registered. The bias of the normally cut off kinescope is then removed which causes exposure of the film. The control unit, being actuated by the horizontal driving pulses, counts 526 lines (i.e., to the end of the 525th line) returning the kinescope bias to cut off ending the exposure. Here then we have a system which does not require synchronism between the camera and the television signal. The incoming signal supplies the keying information so the position of the blanking of the kinescope can change in phasing, but the exposure duration will always be correct because the information is obtained from the television signal. A slow change in speed between incoming signals merely displaces subsequent exposure period.

The basic problem in recording the images, is one of accuracy, imposed by the fact that three adjacent fields are supplying the information for the alternate film picture frames. Referring again to the time sequence diagrams, this fact may be readily seen if we start a scan in the middle of field "A" and continue to field "C" we have completed a picture frame in the required 1/30 of a second, but you will see that information has occurred in three successive fields and the scanning must be accurate for this duration.

The start and stop of the exposure, with either shutter or the electronic system is made during the viewing time; a critical comparison is being made on adjacent television lines so that any non-interlace or shading will easily visible. If a picture splice occurs in the center of one frame it will occur during blanking in the next frame, there the comparison of exposure difference is between the top and bottom of the picture where it is not critical.

Rapid Processing

The next unit of a film system is the rapid processing equipment. The Eastman Kodak Company has found that rapid processing, at elevated solution temperatures, is entirely feasible with the hard positive and negative printing stocks which are now available. The film generally used for this purpose is a fine grain positive stock normally used for theatre release prints. This film is the Eastman 5302 or DuPont, and fortunately is the most reasonably priced film available. Kodak have constructed and demonstrated a rapid processing machine and made the information available to the industry. The film does not suffer from poor grain or other supposed ills of high temperatures and the process is especially adaptable to the high gamma film developing required. 20th Century-Fox, Paramount, and Warner Brothers have experimental equipment of this type for evaluation purposes.

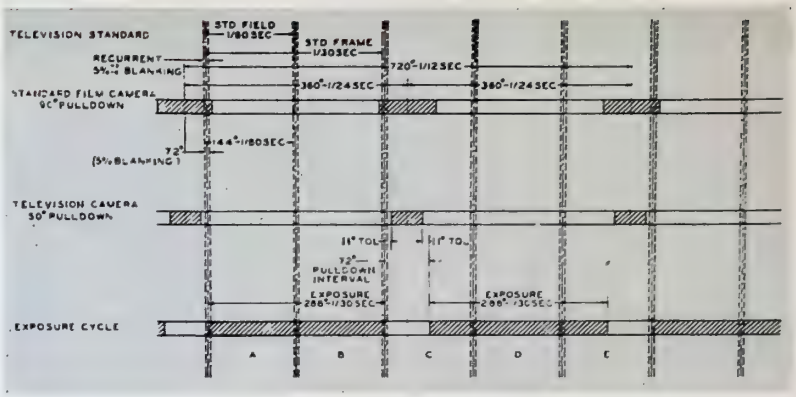


FIGURE NUMBER 6. Television time cycle diagram.

Film Projector

The final link in the film system is of course the standard 35mm motion picture projector. The camera, the rapid processing machine and the projector are so coupled together to form a continuous film path and of course for programming flexibility they can be operated independently.

The two television systems can now be summarized in the following tabulation giving the advantages and disadvantages of each.

Performance

Performance wise the large screen projectors are now limited by the quality of the signals available for projection. The capabilities of the projection system are equal to the best studio television equipment and of course any deterioration of the signal between the camera and the projector causes an inferior picture on the screen. Experience has shown that large screen images produced by both the direct and intermediate systems are entirely acceptable to critical audiences.

A television system for theatre use will no doubt be a closed system on ultra high frequencies and may not be subject to the band width limitations of the 6 megacycle channels used for television broadcasting. The equipment and techniques of operation will continue to be improved to bring high quality television programs to the theatre.

FIGURE NUMBER 7. Comparative tabulation of direct vs. indirect projection of television.

LARGE SCREEN TELEVISION

Direct Projection

Method

High intensity projection kinescope with highly efficient reflective system.

Advantages

1. Appeal of immediate reproduction.
2. Simplicity of operation of equipment.
3. Low operating expense except for kinescope replacement.

Disadvantages

1. Optical system characterized by short throw.
2. Special screen required.

Intermediate Film

Method

Motion picture recording of television image followed by rapid film processing and projection in standard film projector.

Advantages

1. Uses standard film projection equipment with present screen brightness.
2. Programming can be scheduled to best advantage.
3. Permits editing of film.
4. Permanent film record made available for successive shows and syndication to small theatres.

Disadvantages

1. Cost of installation.
2. Operation cost;
   a) Film
   b) Processing
   c) Personnel
3. Sound must be recorded.

Note: Cost is offset because film revenue can be obtained by repeat showing.

Television—Old Wine in a New Bottle

A Practical Theatre Man Discusses the Probable Role of Television in Motion Picture Houses

By E. S. Huber
Purchasing Executive and Maintenance Engineer for Fourth Ave. Amusement Co., Louisville, Kentucky

There's plenty of life in the old theatre yet! In the face of pessimistic predictions based to some extent on samplings of public opinion, film producers and theatre operators maintain a reassuring calm and shrug off threats of annihilation, fatalistic auguries, and all the rest of the crepe in Gloomy Gus' repertoire.

As Jerry Fairbanks pointed out in the 1947-1948 THEATRE CATALOG, the moving pictures offer certain advantages not inherent in video. Among them, crowd psychology—the gregarious tendency—looms as a potent factor in keeping the screen lighted. Mr. Huber expresses his belief that television will be relegated to a minor role in the entertainment of the theatre; and gives his reasons for this unorthodox conclusion.

This article is not intended to be a criticism of television per se nor is it intended to disparage in any way the wonderful strides made in the field of television. It is an expression of the thoughts that have come to me on the matter. The theatre (movies) has been the source of my "bread and butter" for these past twenty years and I hope it will continue to be until I decide to take advantage of my social security benefits. If television will affect the source of my income then I want to know when and how much; if it won't, I don't want to add any more gray hairs to those I now have from worrying.

Like most of us who are now connected with the theatre industry I "gobble up" all the articles written about television, its effects on the theatre, how the theatres will use it, the progress made in television for the theatre, etc., etc. Recently while I was reading one of the various articles on television, the thought came to my mind that perhaps we are approaching the television project from a different angle than we would approach any other project affecting theatres.

In the first place all the articles so far have been written with the attitude that television is "here" and that it is only a matter of time when television will be a part of the theatres; and some articles are written in the vein that television spells the end of movies as they now exist as a source of entertainment. Then comes a listing of the ways in which television will be used. Frankly, I'm not sold. I don't want to be told how theatres CAN use television, I want to be told why theatres MUST use television. When sound pictures became practical it wasn't a case of how to use them, it was a case of having to use them because they were a definite improvement over the silent pictures and the public demanded this improvement in the finished product. The industry recognized sound as an improvement immediately and set out to satisfy the demand. Television must also prove that it is an improvement and it must have the demand. Up to now it has not, to my satisfaction, proven itself in either phase. At the outset there will be a temporary demand because of its novelty, but industries as large as the movies cannot survive on temporary demands.

I've looked for the improvements that television might offer. It isn't in the viewed image. Granted that television images will improve immensely in a very short time, they still will, in my estimation, only approach and will not equal or surpass the standard of the movie projection. Last year at the SMPE Convention in New York City I witnessed the demonstration of large screen television. Compared to what I expected it was surprising; compared to the projection I am accustomed to in our theatres it was pretty poor. The definition, contrast, steadiness, and "lifelikeness" were far below what the theatre patron is used to seeing. The sound likewise was below what the patron has a right to expect when he lays his money down for entertainment.

Granted that these are technical problems that can and will be worked out by the television industry, I personally, don't believe that the projection and sound of television will ever be able to get to a point where they can be considered an improvement on theatre projection and sound. Especially I believe this is true in regard to sound. Radio sound hasn't been as good as theatre sound and there is no reason to believe that television can surpass radio in the sound end. Television projection is below the standards of theatre projection and probably will remain so. I don't think the public will buy an inferior product on these two phases. From the artistic viewpoint wherein is the evidence or proof that television will be able to offer more in star value, more in scenic artistry, more in direction, more in any of the thousand and one items that are involved in the production of a motion picture than the public is now getting at the movies. The public buys the finished product that they see and hear from the screen. Up to now television can offer them only less than they are now getting, and the chances are that they will be able to offer them, at best, only a comparable item and not a superior one. Again I say the public will buy an improved product. Television can't technically offer it to them.

Forget the technical angles! The articles on television projection in theatres have usually been written with the idea in mind that television will become a part of the theatre in one of three ways: 1. A regular program of television composed of various entertainment, such as is now broadcast by radio stations; 2. A constant program that is repeated just the same as the picture in a theatre is repeated; 3. A combination of pictures and television wherein the movies are used until some special event is televised. The switch from movies to television will be made as the occasion suits or demands. Television men and a lot of theatre men seem to take it for granted that one of the above three are inevitable. Maybe they will, but from here I can't see why.

Let's consider these three groups one at a time. First, the regular program of variety entertainment. An element of time enters into this that is a serious drawback. If a patron wants to see a definite item of this program he must be seated in the theatre at a definite time on a certain day or he misses it. If he is late he misses it. Compare this with the movie patron who can come in the theatre at any time and see a complete show whether it be the last day of the program or the first, matinee or night, if late he can stay over and see the part he missed by being late. I don't think the paying patron has too much incentive to buy this type of television in a theatre. Another item that movies can offer is that of subsequent run movies. A missed first-run can be caught later at a neighborhood. Will they have subsequent run television?

For the second group. If the theatre picks up the repeated program in the theatre and the patron will thus be able to stay over and pick up the first reel he missed, I will have to admit that television has overcome objections listed in the first group. But on this type of program what incentive does the theatre have to join the network? Remember the theatre will have competition from every theatre on the network. Will television projection be cheaper? I doubt it. The cost of the technicians in the telecasting studio plus the cost of the men in the theatre will have to be absorbed by the theatres on the network. The theatre will have to have men at the theatre—it looks as if they are taking on the cost of the men in the studio in addition to what they now have. Will the show put on be any better from the

talent standpoint? Twenty to one, television uses movie stars as the main attraction. We've already got them in the movies—no improvement there. Suppose the television station uses movie film for the telecast—they can't offer more in the movie film than we already have. I fail to see where they can offer more or offer the same for the same price. Another thing I believe is that theatre managers would rather depend on the projection in the booth than the network television whether by wire or air, when it comes to film.

For number three. This is, in my estimation, the most practical use of television for the theatre. It does have some merit. In the past, most theatre managers have been able to blame such things as a speech by Roosevelt, a Joe Louis fight, or other interesting events for a loss of receipts at the box office. How much of this blame is justified is a matter that probably never can be settled. If television pick-ups of such events were made by the theatre they could conceivably be a source of income. Whether such income would warrant the cost of the pick-up will be determined by those willing to gamble. It may work out in some instances and fail in others. At any rate the manager of the theatre is taking on a headache in schedule arrangement if he goes in for much of this type television. This will I believe, be the first type of television in the theatres and it is here that television will have to prove itself.

Since my convictions at the present (please note that I'm open for arguments from the other side) are that there is no reason for the theatres to accept television as an integral part of the industry, I must look at television as competition. Certainly it will exist regardless of the attitude the movies take. Frankly I don't know what kind of competition the television industry will be able to offer. Up to now the movies have weathered the opposition of ice-hockey, legitimate theatre, dance halls, night clubs, basket ball, night baseball and football, skating rinks and a host of other attractions that are after the entertainment dollar. I have a vague recollection that radio at one time was supposed to be of great concern to the theatres in that it would keep people at home for entertainment. Now we find that some of the big attractions offered by the movies come from the radio field, —vice versa, too. Radio can hardly be classed as competition for theatres. Maybe television will be different—how, I can't fathom at the present time. I hardly think anything in the home will satisfy the urge of the average man to "go out" for an evening or two a week. He likes a crowd around him. Women especially do, and where they go they take the men with them. Company is as much the entertainment as the attraction in a lot of cases whether it be at home with a few friends or the 1499 strangers with you in the theatre.

Summing up the television-movie future: 1. I fail to find wherein television will supplant or become more than a minor part of the theatre program; 2. I fail to see where home television will be more serious competition (after the novelty wears off) than is the radio.

Am I wrong?

E. S. HUBER — A PROFILE

In 1926 Huber started ushering in Keith's Theatres, Louisville, while attending high school. After graduating, he remained at Keith's doing office work. The death of vaudeville eliminated two theatres and a number of jobs, among them, Huber's. Next he went to Herald-Post as a police reporter for a year. After this (1929), he was employed by the Avenue Amusement Company, Louisville, as part-time file clerk while attending University of Louisville for two semesters. In 1931, Huber was appointed purchasing agent for Fourth Avenue Amusement Company; and held down this job until the present with the exception of 20 months in the army (got out in 1946).

With Fourth Avenue Amusement Co. Huber's job of purchasing agent includes, in addition to buying equipment, supplies, etc., the upkeep and maintenance of buildings and properties along with the equipment. Also includes remodeling, rebuilding, and building of theatres.

Huber's personal history, as briefly reported by the gentleman himself, includes these pertinent data:

Born June 9, 1909; married 1940; has two children. Until a few years ago he was very active in amateur theatre organizations.

A reading of E. S. Huber's theatre experience will make clear that he is well qualified to speak on the subject of moving pictures vs. television. His viewpoints and opinions do not necessarily coincide with those of the publishers. But we rather think they do!

IS "CAPTIVE" TELEVISION THE THEATRE ANSWER?

Out at the TESMA convention, the RCA demonstration of large screen (15 x 20 foot) television proved to have a focal and light quality that would be acceptable to paying audiences if the picture it conveyed was one in which they had interest.

Even competitive manufacturers agreed to that.

But even RCA didn't seem to have the answer to the question of its commercial application. Where was the interesting picture coming from? How could it be scheduled into a normal two-hour show? And how could a theatre charge a 25-90 cent admission for the same picture that could be seen at the corner bar free with a 10-cent beer? Here is that rare case where the engineers are so far ahead that we have a finished automobile with no roads on which to travel and no gasoline to move it.

Out of a welter of ideas that have come to our attention there is one that seems to be constantly rephrased with increasing merit.

Spot news events, such as political conventions, Presidential elections, public parades, and boat launchings are certain to go out over the air to the millions of home sets, with resulting small theatre value. Advertiser-sponsored programs of relative merit will also go out but their value will be further minimized by the objectionable commercial credits. But what about a network of captive lines radiating out from the cities where admission-charged sporting events, pageants, plays, and fashion shows take place, connected to a series of theatres at distant points where special, high admissioned, reserved seat shows have been scheduled?

It certainly seems the right of any sports promoter to sell the television rights to his event just as he now sells the radio and movie ones. Through the captive network he could refuse to sell television rights in his immediate drawing area where reproduction might affect his boxoffice, but could get a percentage of the gate for his particualr event at 1,000 or more theatres throughout the country which couldn't possibly be considered as competition, and whose total seating capacity would dwarf into insignificance the largest stadium. The theatre, in turn, would get some mighty big matinee or evening grosses that might warrant forgetting the normal film program. When a heavyweight fight can scale up to $100 for a ringside folding chair seat at Madison Square Garden, it isn't impossible to imagine an audience in St. Louis that is willing to pay $1.50 for a ringside upholstered chair seat at the same fight in the local first-run.

As a matter of fact, some events might warrant a network of one theatre in each city of 25,000 or more, and 15 or 20 theatres in the larger cities such as Philadelphia, Chicago, Los Angeles, Detroit, etc.

Certain it is that over either air or wire the equipment for theatre television exists.

Is "captive" television the theatre answer?

Reprint of an Editorial originally published in the PHYSICAL THEATRE DEPARTMENT of THE EXHIBITOR under date of October 20, 1948

Emergency Use of 16mm. as Standby

Results of a Field Test of Sub-Standard Equipment Under Normal Theatre Operating Use Before Audiences

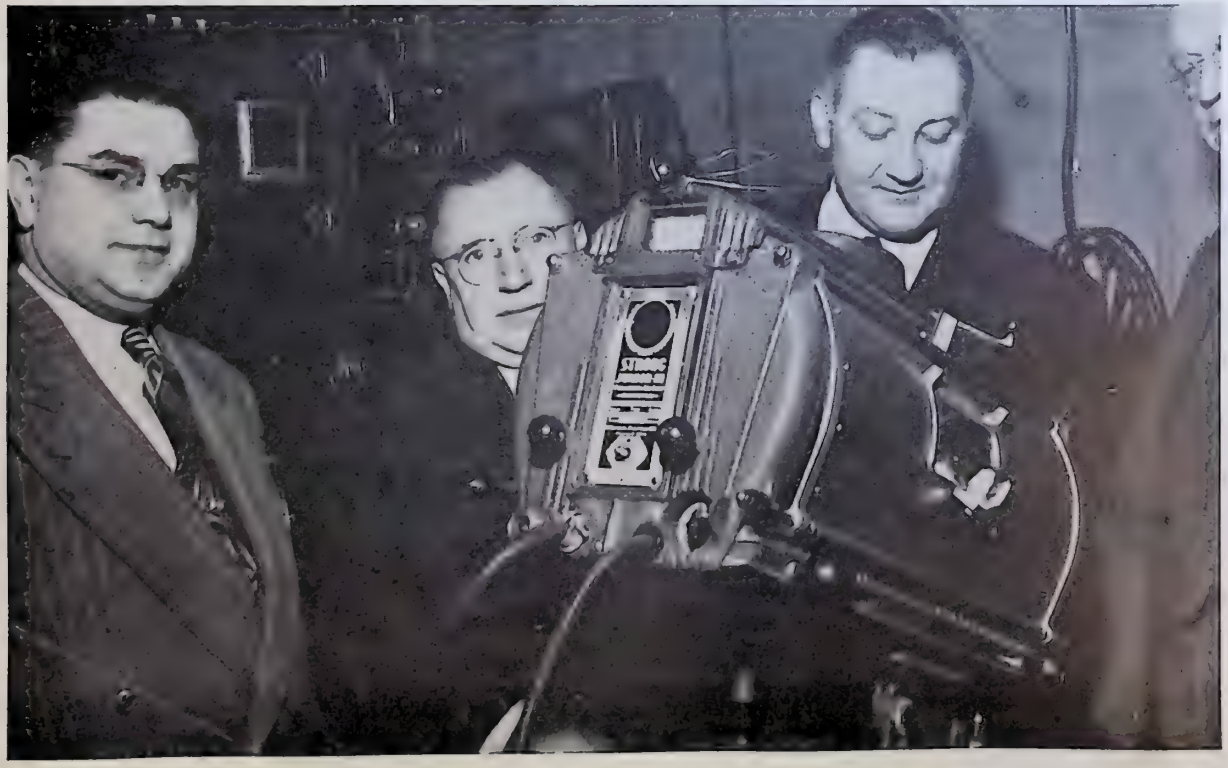
The Uptown Theatre, one of Toronto's largest theatres, was the site in 1948 of an extremely interesting comparative study of the projection quality of 16 mm. arc-lighted projection equipment brought in as an emergency stop-gap measure when power line repair stopped the regular 35 mm. projectors. Here is an account of the event—an ideal experiment under actual field conditions—and data on how the theatre used the smaller projection equipment. In conclusion, the significance of the experiment is commented on in regard to its value for the operator of smaller theatres.

Once in a great while a golden opportunity comes along for conducting an experiment under actual operating conditions and the results of such realistic testing generally throw new light on a much-discussed or controversial problem. A problem like the intrinsic value of 16 mm. film in regular theatre use, for example. Although narrow-gauge or substandard celluloid has been used successfully by the military and in foreign markets for some years, it has never been available in practicable quantities to the operator of the smaller domestic theatres—undoubtedly the logical place for its utilization. Reasons for this dearth may be the problem of distributing more than one size film; or an absence of information on the capabilities of the smaller size film. Or the cause might even be traced to a lack of precedent. If this latter is a factor contributing to the situation, then a new era is at hand because the missing ingredients have been added as the result of a golden opportunity that came to Canada in 1948.

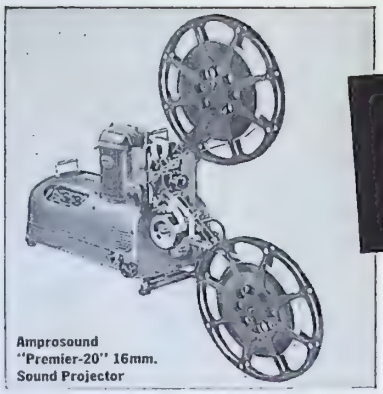
In the early part of that year, one of Toronto's largest theatres and a first-run Loew unit, the 2,743-seat Uptown, was informed of a certain power-line cutoff to be expected at an approximate future time. Ordinarily this would have meant an embarrassing and awkward break in the show with admission returns. And that is exactly what happened at the other Toronto houses where the stoppage of electrical power caused a 45-minute postponement of screen entertainment.

However, the Uptown show went ahead as if nothing extraordinary had happened to the current supply; and the theatre accomplished this seemingly impossible feat by a skillful adaptation of available resources. First, by utilizing 16 mm. prints of its scheduled feature and, second, by installing 16 mm. equipment to run on the 120-volt power line ordinarily reserved for lights and not affected by the power cut-off that deadened the 550-volt line feeding the regular projectors.

After learning of the imminent power-line crisis, Stanley Gosnell, manager of the Uptown, took immediate steps to forestall an emergency. The answer was inevitable — 16 mm. And without any waste of time an Ampro-Arc 16 mm. projector, lit by a simplified-hi carbon arc and operating on 120 volts, was installed for business by Samuel Collis, general manager of Telephoto Industries, exclusive distributors for Ampro in Canada.



AN UNBROKEN DAILY SCHEDULE was maintained at The Uptown, Toronto, Canada, during a power stoppage by the use of a 16mm. projector. Left to right are Sam Collis, Telephoto Industries; Walter Kennedy, Sovereign Films; Stanley Cosnell, mgr., and Sam Wells, projectionist.



Amprosound
"Premier-20" 16mm.
Sound Projector

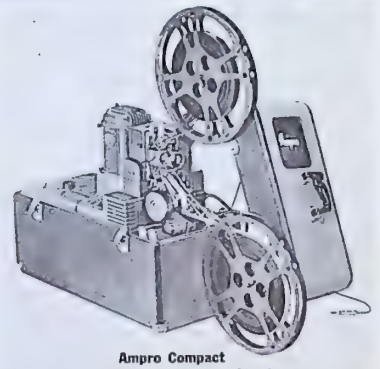
the AMPRO line

Precision Projectors of professional quality

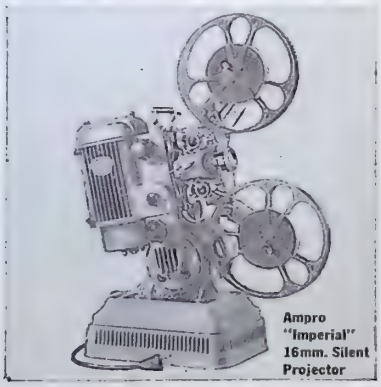
The name "AMPRO" on any projector is your assurance of efficient operation . . . simplified, convenient controls . . . rugged construction . . . and long, satisfactory service.

Proof of this is in the remarkable performance record established by Ampro projectors during the past two decades in leading school systems, universities, top industrial concerns, churches, many branches of government service and in private homes all over the world.

The Ampro organization has the production and engineering facilities plus the practical experience to make some of the world's finest precision projectors. Before deciding on any projector—for any purpose—be sure to find out what Ampro has to offer you.



Ampro Compact
16mm. Sound Projector



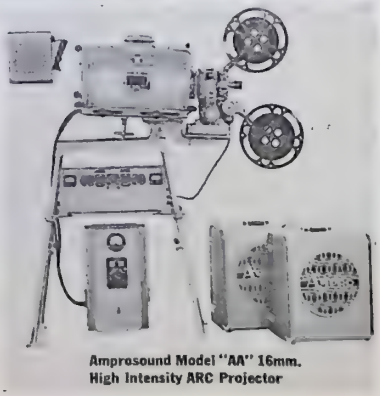
Ampro
"Imperial"
16mm. Silent
Projector

Send for Circular

For complete specifications, prices and full details—write today for special circular on the Ampro models in which you are interested.

THE AMPRO CORPORATION
2837 N. Western Ave., Chicago 18, Ill.
A General Precision Equipment Corporation Subsidiary

AMPRO
PRECISION CINÉ EQUIPMENT



Amprosound Model "AA" 16mm.
High Intensity ARC Projector



Amproslide 2" x 2"
Projector
Model "30-A"



Amproslide Dual
Purpose Projector
Model "30-D"

* T.M. Reg. U. S. Pat. Off.

The 16 mm. machine, which used a 2-inch lens and provided an image only slightly smaller than the 24-foot screen, was placed in the booth from which the projection throw is 120 feet. To eliminate any possible interruption which might arise from the fact that the power would end while the picture was showing, Collis had the 16 mm. projector focused and placed next to the 35 mm. projector which began the performance.

Then, Sam Wells, the regular projectionist, started both projectors which ran at identical speeds—24 frames per second. However, the Ampro Arc machine duplicated the larger projector in everything but light and sound. At the critical moment of power shut-off, Wells switched on current to the 16 mm. projector arc lamp, turned on the sound and the show continued without a noticeable break. In fact, so successful was the change-over that not one of the Uptown's patrons complained or even commented to members of the staff on any variation in show quality. For that matter, not even the management of the theatre detected the change of machines.

This experiment began during the film run of "The Senator Was Indiscreet" and was continued during "A Double Life". Both films were Universal-International productions, and Walter Kennedy who handles that company's 16 mm. department—Sovereign Films—was able to supply the necessary small-gauge prints of each. When 16 mm. prints of scheduled short subjects could not be included, other films of similar interest were substituted. So successful was the experiment that the Uptown management continued their 16 mm. projection for three weeks and brought it to a close only after the installation of a central plant system to generate power during emergency shut-downs.

Certainly the Uptown experiment serves to further emphasize the versatility of 16 mm. projection and to prove its value even under operating conditions more severe than any for which it was originally designed. In Canada there is a renewed interest in the use of 16 mm. arc projectors—especially in out-door theatres, local halls, and villages—since many operators can now see their way clear to a means of providing motion picture entertainment at a fraction of the cost of 35 mm. sound equipment. Even more important, the use of 16 mm. safety film prints would eliminate the need to erect steel and concrete auditoriums; and in Canada this is a substantial item in any new theatre budget, because strict Dominion and Provincial fire restrictions make it almost impossible for a community of under 10,000 population to justify the investment represented by a 3 or 4 day a week theatre. For the U. S. operator, too, the experiment provides an entree into more economical exhibition with attendant savings in building costs, insurance rates, and all the other figures that dwell on the debit side of the books. Thus, the Uptown experiment may bring about a healthful stimulation, both in the 16 mm. equipment and film industry, and in the field of small theatre exhibition.

NEW SMALL TOWN BUILDING CODE

Minimum requirements for the safe construction of theatres within the limited range of building operations common in smaller communities are set forth in the abridged edition of its master basic building code prepared by the Building Officials Conference of America, Inc., especially for communities of 25,000 and less.

The code comes out against the location of theatres "above or below the grade floor of any building." It stipulates that all theatre buildings more than two stories high "shall be of not less than one and one-half hour fire-resistive construction."

Where seats are fixed the code's requirement is that all rows be "individually fixed or fixed in rigid units between longitudinal aisles not less than 36 inches wide," with the distance from back to back being "not less than 32 inches." Aisles must also be 36 inches wide where the seats are not fixed.

The code limits to seven the number of seats intervening between any seat and an aisle. It is suggested that in all theatres with an occupancy load of 100 or more persons all exit doors be equipped with panic-proof latches or bolts which release under a pressure of 15 pounds.

The BOCA advocates that all means of egress be indicated with approved metal signs spelling out "Exit" in red letters not less than six inches high on a white background or other approved distinguishable colors.

Minimum floor loads are set at 60 pounds per square foot where seats are fixed and 100 where they are removable. Allowed for every person in a theatre are six square feet of floor space. Exits must be so arranged as not to require more than 100 feet of unobstructed travel to reach in structures of fire-resistive and protected incombustible construction and 75 feet in those of other type of construction. Structures seating 500 persons or less should have at least two exits, 501 to 900, three exits; 901 to 1800, four exits; over 1800, five exits.

Six air changes per hour are held necessary for a theatre to provide the required fresh air supply. Here's the minimum requirement covering sanitary fixtures: Up to 100 seats, two lavatories; 101 to 250, three; 251 to 500, four; 501 to 1000, six; 1001 to 1500, eight; 1501 to 2000, nine; more than 2000, one per 400 occupants.

(Reprinted from FILM DAILY)

EDITOR'S NOTE: With the availability of current prints on "safety-film", many of the restrictions in present day building codes should evaporate. The fire hazard of 35mm. nitro-cellulose film has created and developed many of the codes that plague the industry today.

INDEXES

Complete Subject Index to 1948-49 Edition

The Entire Editorial Material is Indexed and Cross-Indexed for Easy Reference Use

A

ACOUSTICS
- General discussion of space— ... 314
- —in auditorium remodeling ... 162
- Quonset arch treatment for ... 50

ADVERTISING
- Advance display— ... 492
- Advance publicity in— ... 491
- Advance teasers in— ... 490
- Opening day display in— ... 493
- —that introduced the Odeon-Toronto ... 490

AIR-CONDITIONING
- A problem in air distribution ... 438
- Air circulation in remodeling ... 156
- Air distribution control in— ... 444
- Draft elimination in— ... 438
- Duct and plenum cleaning in— ... 166
- Ducts, in remodeling ... 165
- Efficient air diffusers for— ... 444
- 86,000-gallon tank for— ... 40
- Exhaust outlets for— ... 441
- Fans in— ... 166
- Filters in— ... 166
- Freon cylinders—How to empty ... 442
- Freon leak detection in— ... 442
- Freon-12 maintenance for— ... 442
- Fresh air intake in— ... 166
- Glycol vapor for purification in— ... 436
- Insulation of ducts for— ... 166
- Location of equipment for— ... 166
- Lounge room ventilation as a part of— ... 161
- Method of charging system for— ... 443
- Odeon-Toronto, Toronto, Canada, installation for— ... 40
- Remodeling and— ... 158, 165
- Roof spraying value as an aid to— ... 166
- Shutting down refrigerating systems ... 442

AIR STERILIZATION (See AIR-CONDITIONING)
- American cavalcade of ... 8
- Eberson accomplishments ... 26
- Eberson current construction ... 20
- Eberson, Drew—A Biography ... 4
- Eberson, John—A Biography ... 2
- Mercil, Alexandre—A Biography ... 6
- Summary of preliminary interview ... 23
- The Works of John and Drew Eberson ... 1

AUDITORIUM
- Black light uses in the— ... 316
- Lighting suggestions for the— ... 328
- Remodeling the— ... 161

B

BALCONY
- Carpeting the— ... 164
- Checks before remodeling ... 154

BLACK LIGHT (See DECORATION)

BOOTH, PROJECTION (See PROJECTION BOOTHS)

BOX OFFICE
- Comfort and safety rules for the— ... 62
- Remodeling the— ... 155

BRUSHES
- Motor factors affecting the operation of ... 472

BUILDING CODES (See CODES, BUILDING)

C

CARPETS
- —balconies in remodeling ... 164
- Cleaning grit from— ... 346
- Recommendations in remodeling use of— ... 168
- Sewing and laying— ... 168

CASH CONTROL
- Ticket machines in remodeling ... 156
- Toll system for drive-ins ... 263

CASH CONTROL SYSTEMS
- —for drive-ins ... 227

CEILINGS
- —inspection for remodeling ... 154
- —lobby, in remodeling ... 158
- Painting the auditorium— ... 163

CLEANING
- Central plant vacuum— ... 347
- —the never-swept theatre ... 47
- —through water flushing ... 47
- Vacuum cleaner in— ... 346
- Value of efficient tools in— ... 347

CODES, BUILDING
- —for communities of 25,000 and less ... 536
- —in remodeling ... 154
- Quonset arch restrictions in— ... 50

CONFECTION VENDING
- A survey of conditions in— ... 516
- An independent circuit's methods for— ... 519
- Possibilities of development in— ... 516
- Stock rooms for— ... 522
- Theatre problems in— ... 516
- Walter Reade's circuit forms for— ... 521
- Weekly inventories for— ... 521

CONSTRUCTION
- Glass blocks in— ... 285
- Glass uses for— ... 282
- Inner-service marquee in— ... 290
- Interesting Canadian theatre— ... 34
- Interesting Latin-American theatre ... 43
- Laminated wood, arches in— ... 137
- _____, examples ... 138
- _____, possibilities ... 138
- _____, Capitola, Calif. ... 138
- _____, Harden, Callicoon, N.Y. ... 143
- _____, Kee, Kiester, Minn. ... 145
- _____, Roxy, St. Ansgar, Iowa ... 145
- _____, Walworth, Walworth, Wis. ... 145
- Odeon-Toronto, Toronto, Canada ... 34
- Plastic-finished paneling ... 299
- Quonset arch, acoustical treatment of— ... 50
- _____, codes and restrictions on— ... 50
- _____, comparative costs of— ... 51
- _____, considerations relative to— ... 50
- _____, Crown, Marne, Mich. ... 185
- _____, future developments of— ... 51
- _____, general layout of— ... 50
- _____, Ilan, Fernandina, Fla. ... 53
- _____, low cost of— ... 185
- _____, Molalla, Molalla, Ore. ... 56
- _____, Roxy, Brampton, Canada ... 51
- _____, $61.00 per seat example— ... 185
- _____, speed in construction of— ... 51
- _____, stadium type floor with— ... 50
- _____, Star, South Hill, Va. ... 56
- _____, State, Holstein, Iowa ... 54
- _____, thermal insulation of— ... 50
- Radio studios WBAL ... 57
- Roof design ... 146
- Tacna, Lima, Peru ... 43

CONSTRUCTION, REMODELING (See REMODELING)

CURTAIN CONTROLS (See DECORATION)

D

DECORATION
- Black light, murals in— ... 316
- uses for— ... 316
- Curtain control wiring ... 49
- Design and color trends in— ... 319

Developments in 1948 in— 319
Glass blocks in— 285
Glass uses for— 282
Mirrors in— 285
Odeon-Toronto, Toronto, Canada, scheme in— 35
Photographic glass murals for— 288
Plastic-finished paneling for— 299
Plastic panel installation for— 299
Plastic panel mouldings for— 299
Plastic panels, colors and patterns for— 299
Quasi-marble glass walls in— 288
Queen Elizabeth's use of glass for— 287
Transparent mirror murals in— 283
Unusual fabrics used in 319

DESIGN
Audience comfort through— 61
Black light uses in— 316
Box office 62
Check room 63
Exits 64
Exterior 61
Foyer 61
Front service rooms 61
Inner-service marquee 290
—of an interesting Canadian theatre 34
—of an interesting Latin-American theatre 43
Laminated wood arches in 137
_____, examples 138
_____, fire resistance 138
_____, history 137
_____, possibilities 138
Lavatories 64
Lobby 63
Lounge 63
—of Odeon-Toronto, Toronto, Canada 34
Plastic-finished paneling 299
Quonset arch, acoustical treatment 50
_____, codes and restrictions 50
_____, comparative costs 51
_____, considerations 50
_____, future developments 51
_____, general layout 50
_____, speed in construction 51
_____, stadium type 50
_____, thermal insulation 50
—of Radio studios WBAL 57
Roof construction and— 146
—of the Tacna, Lima, Peru 43

DESIGN, REMODELING (See REMODELING)

DISPLAY FRAMES
In remodeling 156

DOORS
Entrance, in remodeling 157
Foyer 61
Plate glass 284

DRIVE-IN THEATRES
Admission controls for— 229
Analyzing costs of— 254
Area lighting in— 259
Audience expectancy for— 255
Bernstein method of closing— 234
Billboard fences for— 236
—by exchange territories 199
Car-hop service for— 227
Cash control systems for— 227
Cash control through toll system for — 263
Circuit and non-circuit operation of— 199
Circuits interested in— 200
Counting with a treadle in— 263
Crescent, Danville, Va. 251
Efficiency in cash control for— 228
Electrical installation in— 258
Engineering problems of— 258
Fences of billboards for— 236
Floodlighting of— 259
Fogging and dusting services for— 240
Fogging for insect control of— 240
Fog-maker for insects in— 241
G. E. Flamenol cable for— 249
Grading plan for— 252, 253
Grading problems in— 256
Home in a— 222
Horticultural control chemicals for— 238
Importance of confection stands in— 255
—in-car speakers, Autocrat 244
_____, Auto Voice 243
_____, Brunhouse 244
_____, DeVry 244
_____, DIT-MCO 244
_____, HAN-D-VOX 245
_____, Mobiltone 245
_____, Motiograph 246
_____, RCA 246
_____, Simplex 247
_____, Soundmaster 248
_____, Theatre Equipment Co. 248
Insect control for— 237
Man made moonlight for— 259
Modern toll system for— 263
Motor-Vu, Salt Lake City, Utah 222
New American Institution 221
Open and closed 198
Operating policies of 202
Pest control for— 238
Planning for 255
Portable cashier for 230
Ramp plan for 252
Screen tower, design for 242
_____, concave-sloped 266
_____, concrete foundations 266
_____, construction details 265
_____, design 257
_____, esthetic value 267
_____, of laminated wood masts 242
_____, prefabricated steel 265
_____, sizes and erection costs 266
_____, sloped only 266
Seasonal closing practices of— 231
Selection of site for— 255
Service buildings in the— 257
Simplex-ANHYDREX cables for— 249
Size evaluation of 255
Speakers must be weatherproof in— 250
Test borings for— 251
Topographical surveys for— 251
Under construction 218
Underground cables for— 249
United States list of— 198
Van Lloyd method of closing the— 231
Whitney Blake Teleseal cable for— 250
Wiring plan for— 252

E

ELECTRIC WIRING
Panels—(See WIRING, ELECTRIC)

EMERGENCY AND STANDBY POWER
Available equipment for— 338
Experience of Rosy, Slippery Rock, Pa., in— 337
Importance of— 337
Table of theatre requirements for— 341
—through power plants 339
—through storage batteries 339

EQUIPMENT
—in remodeling 167

EXITS
Emergency, comfort and safety rules 64
_____, lighting suggestions 328
_____, recommendations for 164
_____, sources of power 337
_____, wiring of lights 49

EXPLOITATION
—as practiced at the Rivoli, New York 494
Opening the Odeon-Toronto with— 490
The stunts of Montague Salmon in— 494

EXTERIOR
Comfort and safety rules for the— 61

F

FINANCING
Money for remodeling 154

FLOORS
Balcony slopes 163

Lobby in remodeling 158
Slopes for good seating 344
Vestibule in remodeling 157
FOYER
Comfort and safety rules 61
FRONTS
Lighting suggestions for— 327
Remodeling of— 155

H

HEATING
Automatic controls for— 164
Inspection for remodeling of— 154, 164
Odeon-Toronto, Toronto, Canada, system for— 40
Possibilities of indirect— 164

I

INSULATION, THERMAL
Quonset arch considerations 50
INSULATION, ACOUSTIC (See ACOUSTICS)

L

LAMINATED WOOD CONSTRUCTION
(See CONSTRUCTION and DESIGN)
LAVATORIES (See TOILET ROOMS)
LIGHTING, DRIVE-INS (See DRIVE-IN THEATRES)
LIGHTING, EXTERIOR
Emergency power sources for— 337
LIGHTING, INTERIOR
Auditorium 328
Decorative elements of— 328
Dimmer controls for— 329
———, installations for— 333
———, limitations for— 335
———, location of— 331
———, remote control for— 333
———, selection of— 331
Emergency power sources for— 337
Front and lobby 327
Guiding principles for— 327
Importance of— 160
—in remodeling balconies 164
Lounge areas— 328
Stage areas— 328
Types of dimmers for— 330
—with downlights 328
LIGHTING, PROJECTION (See PROJECTION LIGHT)
LIGHTING, SIGNS
Wiring sign panel for— 48
LIGHTING, STAGE
Wiring general panel for— 48
LOBBY
Comfort and safety rules of the— 63
Lighting suggestions for the 327
Remodeling the 158
LOUNGE
Comfort and safety rules for— 63
Importance of privacy in— 160
Lighting suggestions for— 328
LOUNGE ROOMS
—in remodeling 159
Plastic panels in 300

M

MAINTENANCE
Cleaning plastic panels 300
MANAGEMENT
Closing for remodeling 155
Cost of film 500
Depreciating building equipment 504
Depreciation schedules 503
Depreciating theatre equipment 503
Expenses, profits, and valuations 500
General overhead 501
Hand driers in— 508
Percentage of rent 500
Periodic sanitation service for 509
Review of theatre finance 500
Sanitary maintenance importance 506
Theatre budget table 502
Time element in remodeling 154
MARQUEE
Construction of inner-service— 290
Design of inner-service— 290
Maintenance efficiency of inner-service— 291
New advertising effects through— 292
Operating costs of inner-service— 290

P

PANEL BOARDS (See LIGHTING, STAGE)
PICTORIAL SURVEYS, NEW
Battle Creek Auto, Battle Creek, Mich. 130
Bellwood Drive-In, Richmond, Va. 125
Capitola, Capitola, Calif. 138
Coral, Bradbury Heights, Md. 82
Crown, Marne, Mich. 185
Dixie, Miami, Fla. 84
Dome, Libby, Mont. 120
Fairview, Fairview, Ohio 86
Family Drive-In, New Kensington, Pa. 134
Gratiot Drive-In, Detroit, Mich. 128
Harden, Callicoon, N. Y. 143
Helix, La Mesa, Calif. 90
Ilan, Fernandina, Fla. 53
Kee, Kiester, Minn. 145
Lake, Warsaw, Ind. 98
Lane, Columbus, Ohio 92
Mancuso, Batavia, N. Y. 72
Manos, Monessen, Pa. 102
Milford, Milford, Del. 88
Molalla, Molalla, Ore. 56
Niles Outdoor, Niles, Mich. 126
Odeon-Champlain, Montreal, Canada 122
Odeon-Danforth, Toronto, Canada 94
Odeon-Toronto, Toronto, Canada 34
Odeon, Victoria, Canada 116
Odeon, West Vancouver, Canada 108
Old Trail, Columbus, Ohio 118
Paris, New York, N. Y. 96
Rex and Duplex, Havana, Cuba 65
Richfield, Richfield, Minn. 69
Rita, Vallejo, Calif. 114
Roxy, Brampton, Canada 51
Roxy, St. Ansgar, Iowa 145
San Pedro Outdoor, San Antonio, Texas 135
Shoals, Florence, Ala. 106
Smyrna, Smyrna, Del. 79
Star, South Hill, Va. 56
State, Holstein, Iowa 54
Strand, Erie, Pa. 110
Summer Drive-In, Memphis, Tenn. 136
Tacna, Lima, Peru 43
Ute, Rifle, Colorado 104
Valley, El Paso, Texas 112
Valley Drive-In, Ontario, Calif. 132
Vogue, Pittsburgh, Calif. 100
Walworth, Walworth, Wis. 145
Woods, Grosse Pointe Woods, Detroit, Mich. 76
PICTORIAL SURVEYS, REMODEL
Astor, Boston, Mass. 169
Beacon Hill, Boston, Mass. 176
Center, Pawtucket, R. I. 178
Coniston, Newport, N. H. 170
Esquire, Fresno, Calif. 157
Madison, Madison, Conn. 182
Roxy, Kansas City, Mo. 155
State, Jersey City, N. J. 161
State, Nashua, N. H. 169
Strand, Hartford, Conn. 174
Strand, Thompsonville, Conn. 183
Strand, Fall River, Mass. 180
Strand, Southbridge, Mass. 184
Tower, St. Louis, Mo. 155
Wareham, Wareham, Mass. 172
PLUMBING
Odeon-Toronto, Toronto, Canada, system 41
PROJECTION BOOTH
Light and power wiring 48
Refitting in remodeling 164

PROJECTION, LIGHT
Ballantyne model 4570 High Intensity Lamp for— 402
Contrast between high and low— 392
—distribution of high intensity arc 393
Forest electronic arc lamp for— 400
—generation of high intensity arc 390
High intensity arc lamp for— 393
Motiograph-Hall high intensity lamp for— 398
Peerless Condenser-lens for— 396
Peerless Heat-Filter unit for— 396
Peerless Hy-Candescent lamp for— 393
Peerless Water-Cooled Positive Contacts for— 396
PROJECTION POWER
Lightmaster rectifiers for— 403
Emergency sources for 337
PROJECTION ROOM (See PROJECTION BOOTH)
PROJECTORS
Ballantyne model 1800 bases for— 403
Ballantyne model R 403
Light duty and portable 409
RCA Brenkert-60 405
Simplex-SP 409

Q

QUONSET CONSTRUCTION
(See CONSTRUCTION and DESIGN)

R

RADIO STUDIOS (See STUDIOS, RADIO)
REMODELING
Air-conditioning equipment 165
The auditorium 161
Balconies 163
Electric wiring 166
Equipment 167
The heating plant 164
The lobby 158
Planning the work of— 154
Rest rooms 159
The theatre front 155
RESTAURANTS
Odeon-Toronto, Toronto, Canada 42
ROOFS
Asbestos coating for— 146
Auditorium remodeling and— 164
Essentials of— 146
Inspection for remodeling of— 154
RUBBER MATS
Perforated in remodeling 159

S

SEATING
Aisle and step light wiring 49
Aisle light suggestions 328
Balcony slopes 163
Chair recommendations in remodeling 167
Floor slopings for vision 344
Fundamentals of correct— 342
Importance of 342
Installation in remodeling 162
Problems involved in 342
Staggered for vision 343
SERVICE ROOMS
Comfort and safety rules for— 61
SIGHT LINES
Ideals in remodeling 162
Standards for ideal 343
Through floor slopes 344
SIGNS, ELECTRIC
In remodeling 157
16 MM. PROJECTION AND SOUND
—as used in the Uptown, Toronto 534
Three weeks operation in a 2743-seat theatre of— 534
—with projection throw of 120 feet 536
SOUND
Ballantyne Golden Voice horns for— 404
Ballantyne model 8 sound head for— 402
Simplex NP-30 amplifiers for— 410
STAGE
Lighting suggestions for— 328
Switchboard requirements for— 329
Value in remodeling the— 164
STANDBY POWER (See EMERGENCY and STANDBY)
STANDEE AREA
—in remodeling 162
STUDIOS, RADIO
Station WBAL, Baltimore 57
SUPPLY DEALERS
—of the Dominion of Canada 473
—of the Rest of the World 474
—of the United States 456

T

TELEPHONES
Inter-communication wiring of 49
Notes on wiring of 49
TELEVISION
A theatre man's views on— 532
—by direction projection 528
"Captive" lines for theatres 533
Film projector for— 531
Intermediate film system for— 529
Optical system for— 528
Projection kinescope for— 528
Reviewing screen information— 529
Theatre applications of— 528
Theatre performance of— 531
THERMAL INSULATION (See INSULATION, THERMAL)
TILE
Ceramic, in remodeling 159
TOILET ROOMS
Cleaning program for— 508
Comfort and safety recommendations for— 64
Disinfectants used in— 507
Eliminating odors in— 506
Hand driers for— 508
Sanitary maintenance of— 506
Sanitation service for— 508
Soaps and dispensers used in— 508
West periodic service of— 509

V

VENDING (See CONFECTION VENDING)

W

WAINSCOT
Recommendations for— 164
WALLS
Auditorium remodeling of— 164
Lobby, in remodeling 158
—of Temprex glass 288
Painting the auditorium— 163
WIRING, ELECTRIC
Aisle and step lights— 49
Black light requirements of— 317
Buzzers in— 49
Convenience outlets in— 49
Cost discussion of— 167
Current savings in— 167
Curtain control— 49
Diagrammatic layout of— 48
Dimmers in current saving 167
Dimmer installation 333
Dimmer location 331
Emergency lighting 167
Exit lights 49
Feeder line layout for— 48
General lighting panel 48
General lighting recommendations 49
—in remodeling 166
Inspection for remodeling of— 154
Power panel 49
Practical notes on 48
Projection room light and power 48
Sight lighting panel— 48
Small motors— 49
Telephones 49

Cumulative Index to All Previous Editions

Topical References to All Articles Published in Prior Volumes of Theatre Catalog

A

ACOUSTICS
- Absorption of sound 6:145
- Audibility and 6:244
- Construction of 6:144
- Decorative aspects of 2:154
- Design for 6:144
- Effect of painting on..... 5:224
- Fabric uses in 4:209; 6:145
- Fiberglas and 5:232; 6:160
- Materials for 6:250
- Noise elimination and 6:245
- Noise level and 6:244
- Planning of 3:192
- Principles of 4:152; 6:244, 249
- Reverberation and 6:247, 249
- Sound distribution in 6:246
- Sound transmission and 6:244
- Studio design and 5:539
- Theatre requirements of 2:246

ADVERTISING
- Basic appeals in 2:297
- Exploitation through 2:292; 3:287
- Forms for record on 6:502
- Hints on preparing 6:487
- Intra-theatre displays and 4:430
- Layouts for 3:287
- Outdoor stands and 4:440
- Outsize displays and 4:435
- Sign Letter Typography 2:176
- Trailers and 5:442

AIR CONDITIONING
- Automatic controls in 5:378
- Centralized systems for 6:390
- Comfort and 5:368; 6:403
- Compressors, freon 6:399
- Corrosion control in 5:382
- Draft control in 4:372
- Dry-bulb temperatures, U.S.A. 6:396
- Electronic air filters in 3:325; 6:404
- Freon for 6:398
- Heat pumps in 5:372; 6:416
- Humidity control in 6:401
- Maintenance of 2:328; 3:319, 331; 4:379; 5:389
- Medical angles of 2:316
- Operational standards in 2:317
- Packaged systems 6:390, 395
- Plan and design of 2:317
- Refrigeration in 6:398
- Reverse-cycle units in 5:372
- Solar heating and 6:411, 412
- Thermal insulation for 5:386, 387
- Types of systems in 2:330
- Unit systems 6:390, 395
- Wet-bulb temperatures, U.S.A. 6:396

AIR STERILIZATION
- Duct use of lamps in 4:495
- Fixtured use of lamps in.. 4:491; 5:496
- Technical details of 4:486; 5:496

AISLES
- Construction of 6:144

ALARMS, EXIT DOORS
- Design and construction 6:141

SPECIAL NOTE

All entries are given by edition number and, following the colon, the page on which starts the article containing the indicated information.

The dates of the several editions are as follows:

2nd Edition	1941
3rd Edition	1942
4th Edition	1945
5th Edition	1946-47
6th Edition	1947-48

B

BILLIARDS
- Installation 6:522
- Lounge—refreshment area 6:522
- Theatre tie-ins with 6:520
- Typical theatre layouts 6:520, 521

BLACK LIGHT
- Decorative uses of 4:216; 5:220
- Theatre uses of 3: 12

BOOKKEEPING
- Management systems 2:286; 3:267; 4:446

BOOTHS, PROJECTION
- (See PROJECTION ROOMS)

BOOTHS, TICKET (See BOXOFFICES)

BOX OFFICES
- Aluminum uses in 6:163
- Design of 5:191
- Location of 2:182

BULBS, LAMP
- (See LAMPS, INCANDESCENT)

C

CANDY STANDS
- (See CONFECTION STANDS)

CARBON-ARC
- (See LAMPS, CARBON-ARC)

CARPETS
- Axminster 6:265
- Backing and quality 6:264
- Burns repair in 6:266
- Chenille 6:276
- Color coordination in 6:261
- Cushions for 3:169
- Daily care for 6:267
- Decorative use of 3:165
- Depressions 6:144
- Installation of 3:173
- Maintenance of 2:140; 3:296; 4:224; 6:263, 265, 266
- Spot removal 6:266
- Tapestry 6:265
- Trends in design and use of 4:221
- Velvet 6:266
- Wilton 6:263

CARPET CUSHIONS
- General discussion of 3:169

CASES, DISPLAY
- Design of 5:191

CASH CONTROL
- Boxoffice safes 5:460
- Safes 5:458
- Systems for 3:272
- Tickets 3:272
- Tube transportation 6:432

CENTERS, AMUSEMENT
- 5-phase project 6:517

CENTERS, COMMUNITY
- Navy Point, Florida 5:174

CENTERS, RADIO
- Radiocentro, Havana 5: 11

COMFORT
- Essentials of 2:169; 5:368
- Humidity and 6:401

CONFECTION STANDS
- Beverage Bars 6:551
- Beverage bottle service 6:522, 548
- Candy in 2:270; 6:518
- Candy-counter operations in 2:277
- Cup vending 6:546, 549, 550
- Dual-flavor units 6:546
- Frozen food in 4:526
- Ice cream in theatres 6:518
- Maintenance of equipment in 4:522
- Miami Theatre layout 6:519
- Popcorn in 2:70; 4:522; 6:536
- Popcorn seasoning 5:515
- Sanitation codes 5:514
- Vending machines in 2:270

CONSTRUCTION
- Acoustical 6:144
- Aisles 6:144
- Aluminum in 6:166
- Attic 6:155
- Auditorium 6:139
- Awards for "Perfect 36" in 3: 9
- Boiler Room 6:154
- Boxoffice 6:133
- Building codes and ordinances on 2:21; 6: 16
- Building standards in 2: 17
- Ceiling 6:140
- Cement and concrete in 4:154
- Copper used in 4:140
- Doors 6:136
- Dual-auditorium theatres 3: 17
- Economic fundamentals of 4: 8
- Economies possible in 3:141
- Electric control room 6:154
- Entrances 6:130, 134
- Film exchanges 6:156
- Fronts 4:179
- General factors in 6:129
- "Home in a theatre" 4:461
- Ladies rooms 6:150
- Lead used in 4:141
- Lobby 6:136
- Magnesium used in 4:144
- Manager's office 6:154
- Men's rooms 6:151
- Metals used in 4:131
- Mexico 4:168
- Mezzanine 6:147
- Plastics used in 4:152
- Porcelain enamel used in 4:174

Pre-fabrication and 4:122, 128
———, all-steel, and 4:118
———, alumidrome 6:166
———, plastic-plywood, and 4:125
Progressive execution of 3:298
Projection room 6:149
Proscenium opening 6:148
Quonsets and 5:145; 6:19, 22, 24, 29
Review of 5: 33
Roof gardens 4:460
Sight lines and 3:153
Standee foyer 6:137
Vermiculite and 5:169
Wood utilization in 4: 4

CORROSION
Control of 5:382

CROWD CONTROL
Handling of crowds 5:502

D

DECORATION
Acoustic materials in 2:154
Acrylic plastics in 6:253
Black light and 3:12; 4:216; 5:220
Carpets used in 3:165
Cement and concrete in 4:154
Chemists' developments in 4:150
Circlarc Lamps in 6:310
Color and 2:122; 3:188; 4:109
Construction and 6:145
Copper used in 4:140
Fabrics used in 2:131; 4:209
Fiberglas used in 5:232; 6:161
Glamour and 4:208
Lead used in 4:141
Metals used in 4:131
Painting with light 6:253
Plastics used in 4:152
Plexiglas used in 4:147; 6:253

DEPRECIATION
Equipment rates 2:265

DESIGN
Acoustics and 2:152; 3:192; 6:144
Adaptation of, to locale 2:10; 4: 2
Air conditioning plan 2:317
Aisles 6:144
Alumidrome 6:166
Art-cinemas 6:509
Attic 6:155
Auditorium 6:139
Boiler room 6:154
Boxoffice 5:191; 6:133
Boxoffice location 2:181
Candy stands 5:510
Carpet trends in 4:221
Ceiling 6:140
Centers, community 5:174
Centers, radio 5: 11
Color and 4:109
Computation of capacity in 6:129
Display cases and 5:191
Dual auditorium 3: 17
Entrances 6:130
Film exchanges 6:156
Fronts 3:199; 4:179
Functionalism in 2:22; 6: 6
Future aspects of 2:12; 6: 7
"Home in a theatre" 4:461
Ladies' rooms 6:150
Lighting, interior 4:218
Lobby 6:136
Maintenance angles in 2: 20
Manager's office 6:154
Men's rooms 6:151
Mexican theatres 4:168
Mezzanine 6:147
Pre-fabrication and 4: 4, 118, 125; 6:166
Problems in 5: 2
Projection room
2:202; 3:260; 4:326; 6:149
Proscenium opening 6:148
Roof gardens in 4:460
Seating 4:226
Sight lines in 3:153
Signs 2:194
Stadium plan 6:146
Stages 4:229; 5:237
Standee foyer 6:137
Studio acoustic 5:539
Theatres in airplanes 5:554
Theatres in ships 5:471
Theatres in trains 5:471
Toilet plan 4:278
Trans-Lux advantages 4:468

DISPLAYS
Aluminum used in 6:163
Cases and frame design 5:191; 6:134, 136
Intra-theatre advertising 4:430
Oversize advertising 4:435

DRIVE-IN THEATRES
Boxoffice needs in 6:186
Concession stands 6:187
Design and
construction 3:145; 4:471; 6:180
Drainage in 6:183
Drive-Over and Drop-In 4:105
Equipment needs in 6:189
Fence needs in 6:189
Ideal layout for 6:180
Landscape needs for 6:188
Management methods 4:471; 5:470
Operating procedures 2: 15
Ordinances covering 6:182
Projection buildings 6:187
Screen towers 6:185
Sign needs of 6:185
Surfacing of 6:184

E

EMERGENCY
Exit Doors 6:141
Fire 4:232, 505, 540
First Aid 4:509
Holdup safeguards 5:461
Lightening 5:482

EQUIPMENT
Chemists' developments in 4:150
Conservation of 3:278a
Depreciation rates of 2:265
Maintenance of 3:278a; 4:379
Projection 3:243, 260
Sound 4:313
Television 5:534
Toilet 4:278

EXHIBITION
Children's shows in 5:476
Itinerant booths in 4:129

EXPLOITATION
Advertising and 2:292; 3:287
Construction 6:478
Hearing aids in 6:348
House organs and 6:486
Local news reels 5:564, 568
Posters in 4:433
Trailers in 2:292; 5:442

F

FABRICS
Acoustic effect of 4:209; 6:145
Construction with 6:146
Decoration and 2:131; 4:209
Fiberglas 4:112; 5:232; 6:160
Progress in 4:211
Theatre individuality and 2:211
Upholstering and 3:149

FINANCING
RFC procedures in 2: 13

FIRE
Duties of personnel in 4:540
Fighting of 4:232
Sprinkler protection 6:429
Tragedy prevention in 4:505
Types of 4:232

FIRE EXTINGUISHERS
Locations for 3:276; 4:232; 5:483
Maintenance of 3:276; 4:232; 5:483
Types of hand-operated 4:232; 5:483

FIRST AID
Refresher course on 4:509

FLOORS, HARD-SURFACE
Asphalt tile 6:208
Maintenance of 4:184

FLOOR SLOPES
Curves 6:143
Elevation 6:142
Sightlines and
seating 2:118; 3:153; 6:140

FRONTS
Aluminum used in 6:163
Design of 3:199; 4:179; 6: 8
Glass used in 2:178
Plastics used in 2:178
Porcelain enamel in 2:178; 4:174
Remodeling of 6:206

G

GENERATORS
Discussion of 4:288

GLASS
Theatre fronts 2:178

H

HAND DRIERS
For lavatories 5:282

HEARING AIDS
Induction system 6:349
Potential revenue from 6:347

HEATING
Gas Turbine method of 6:414
Maintenance of 5:392
Powder-fine coal system 6:414
Radiant heat discussion 4:375
Solar principle in 6:411, 412
Summer care of 5:392

HEAT PUMPS
Air conditioning with 5:372

HOLDUPS
Safeguards against 5:461

I

INSECTICIDES
Kinds and uses of 4:498

INSULATION, SOUND
Fiberglas in 4:112
Vermiculite for 6:171

INSULATION, THERMAL
Air conditioning and 5:386
Mineral wool in 6:168
Roof treatment for 5:387
Types of 6:168

INSURANCE
Types of coverage by 4:444

INVENTORY CONTROL
Forms for 6:492
Item identification in 6:491
Repair shop reports in 6:492
Warehouse reports in 6:492

L

LAMPS, CARBON-ARC
Arc stabilization method in 6:339
Ashcraft C-70 ..... 6:338
Electronic-control 5:286
Gaumont-Kalee 21 ..... 6:332
Low-intensity types of 3:247
Operation of 2:223
Requirements for 3:219, 4:285
Terminology for 3:231

LAMPS, CIRCLARC
D.C. operation 6:311
Wiring diagram 6:310

LAMPS, CONCENTRATED-ARC
Description of 5:289

LAMPS, INCANDESCENT
Bulb maintenance 5:187
Storage 6:154

LAMPS, STERILIZATION
Duct use of air 4:495
Fixtured use of air 4:491; 5:496
Ultraviolet sanitation 4:486, 491, 495; 5:496

LAVATORIES
Hand driers in 5:282

LAWSUITS
Suggestions for avoiding 2:297

LENS COATING
Developments and history of 4:299

LENSES, PROJECTION
Low-reflection films for 4:299
Orthoscope auxiliary system for .. 4:293
Screen results with 2:241

LIGHTING, EMERGENCY
Discussion of 5:482

LIGHTING, EXTERIOR
Indirect systems for 3: 19
Modernization with 5: 7
Sign 6:131

LIGHTING, INTERIOR
Circlarcs in 6:310
Indirect systems for 3: 19
Modernization with 5: 7
Planning for 4:218
Rest room 6:151

LIGHTING, PROJECTION
Carbons in 5:313
Requirements for 4:285

LIGHTING, SIGN
Cold-cathode in 5:178

LOBBY
Ceiling construction 6:136
Rubber mat uses 4:182

LOBBY FRAMES (See CASES, DISPLAY)

M

MAINTENANCE
Air conditioning 2:328; 3:319, 331; 4:379; 5:389
Carpets 2:140; 3:296; 4:224; 6:263, 265
Construction notes on 6:132
Equipment 3:278a; 4:379
Hard surface floors 4:184
Heating 5:392
Plumbing fixture 6:320
Procedures in 2:290
Projection equipment 2:226; 5:323
Rubber mats 3:216; 5:194
Signs 4:177; 5:187
Sound 2:210; 5:123
Theatre preservation through 5:435
Vacuum systems 6:428

MANAGEMENT
Art-cinemas 6:508
Bookkeeping system for 2:286
Cash controls for 3:272
Children's shows 5:476
Clearance calendar for 2:284
Discussion of 2:278
Drive-in theatres and 4:471
Forms and systems for 3:267; 4:446
Hearing aids in 6:348
Insurance program for 4:444
Popcorn and 4:522
Service companies and 4:420, 428
16mm combination policy 6:572
Trailers in 5:442
Trans-Lux theatres and 4:468
Wholesale buying for 2:298

MARQUEE
Design of 2:194
Lighting 6:131

MODERNIZATION (See REMODELING)

N

NEWSREELS, HOME-MADE
Cooperative plan for 5:564
Experiences with 5:568

P

PAINTING
Effect on acoustics 5:224

PARKING
Barriers for 6:499
Claims checks in 6:499
800-car lot for 5: 30
Off-street facilities for 5: 14
Space needs of cars 6:498
Zoning on 6:497

PERSONNEL
Hand signals for 2:167
Home-study course for 4:536
Manager training 5:529
On-job training course for 4:539
Operator's training course 5:572
Patron expectations of 2: 64
Rules of conduct for 2:262
Standee management by 2:266
Training of, for fire duty 4:540
Work of managers 5:522

PESTS (INSECT)
Control of 3:292; 4:498

PRINTS, 16-mm.
Prolonging service life of 5:570

PROJECTION
Carbon monoxide gas in 6:352
Cyanide gas in 6:352
Equipment for 4:304
Fault correction in 5:302
Standards for 2:228

PROJECTION, 16-mm.
Theatre use of 5:546

PROJECTION LIGHTING
Carbons in 5:313
Concentrated arc lamps 5:289
Electronic control lamps 5:286
Low-intensity lamps 3:247
Operation of lamps 2:223
Requirements for 4:285
Terminology for 3:231

PROJECTION OPTICS
(See LENSES, PROJECTION)

PROJECTION ROOMS
Design and plans for 2:202; 4:326; 6:149
Equipment for 3:243, 260
Hazards in 5:328
Itinerant exhibition 4:129
Location of 3:260
Telephone in 6:149

PROJECTORS
DeVry 12000 series 6:329
Gaumont-Kalee 6:332
Maintenance of 2:226; 5:323
Motiograph Model AA 5:293
Service for 4:420
Survey of 4:304

PROJECTORS, 16-mm.
Developments in 5:550
Discussion of 5:550
Trends in 5:550

Q

QUONSET
Construction with 5:145; 6:19, 22, 24, 29, 31

R

RECTIFIERS
Copper oxide 4:291; 5:306
Magnesium-copper sulphide 5:308
Selenium 5:309
Tube type 6:341

REFLECTORS
Manufacture of 4:293

REMODELING
Business-boosting through 2:281
Methods in 3:180
Modernizing with light 5: 7
New Theatre, Baltimore 5:129
Obsolescent auditoriums and 4:157

REST ROOMS
Appeal value of 2:124

ROOFS
Construction of 4:166
Thermal insulation 5:387

RUBBER MATS
Care and maintenance of .. 3:216; 5:194
Installation of 3:177
Lobby uses of 4:182

S

SAFES
Discussion of 5:458

SAFES, BOX-OFFICE
Discussion of 5:460

SAFETY
Underwriters' film standards 5:489

SANITATION
Codes and, in theatre vending 5:514
Hand driers and 5:282
Ultraviolet light and 4:486, 491, 495; 5:496

SCREENS
Projection lenses and 2:241
Retiscope (Nu-Screen) 4:284

SEASONING, POPCORN
Discussion of 5:515
Types of 5:515

SEATING
Designs for 4:226; 6:142
Installation of 3:157; 4:226
Sightlines and 2:118; 3:153
Spacing for 2:118

SERVICES
Air-conditioning 5:428
Housekeeping 5:428
Inventory 5:428
Management 5:428
Sound 5:434
Trade-union 5:428
Users of 4:420

SIGNS (AND LETTERS)
Cold cathode in 5:178
Design of 2:194; 6:130
Maintenance of 4:177; 5:187
Review of 5:181
Storage 6:132, 154
Typographic principles for 2:176
16-MM.
Business films in 5:559
Carbons, hi-intensity 6:570
Equipment for 4:483
Hospital uses of 6:511
Marcal Theatre, Hollywood 5:546
Operator's training course 5:572
Plastic-plywood construction for .. 4:125
Potentialities of 4:483
Vehicles for utilizing 5:554
SOUND
Absorption values 6:145
Action of 6:246
Duosonic loudspeakers 6:337
Fault correction in 5:320
Maintenance of 2:210; 5:123
Requirements for hearing 6:244
Service on 5:434
Survey of equipment for 4:313
STAGES
Design of 4:229; 5:237; 6:2, 148
Equipment for 4:229; 5:237
Lighting 6:268
STANDS, CANDY
(See CONFECTION STANDS)
STUDIOS, BROADCAST
Acoustic design of 5:539

T

TELEVISION
British experience in, for theatres 4:552
Equipment for 5:534; 6:566
Motion-picture Industry and 4:544, 545, 549, 569; 6:566
Principles of 4:563
TICKETS
Cash-control system with 3:272
TOILETS
Advancements in 6:307
Design and planning of 4:278
Equipment for 4:278; 6:318, 319
TRAILERS
Advertising use of 5:442
Exploitational use of 2:292; 5:442
Place of, in management 5:442
TRANS-LUX THEATRES
Equipment for 4:468

U

UNDERWRITERS
Film safety standards 5:489
UPHOLSTERY
Wearing qualities of 3:149

V

VENDING MACHINES
Frozen food 4:526
VENTILATION
Draft control in 4:372
Toilet room 6:152

W

WALLPAPER
Developments in 5:276
Uses of 5:276
WATERPROOFING
Toilet rooms 6:152